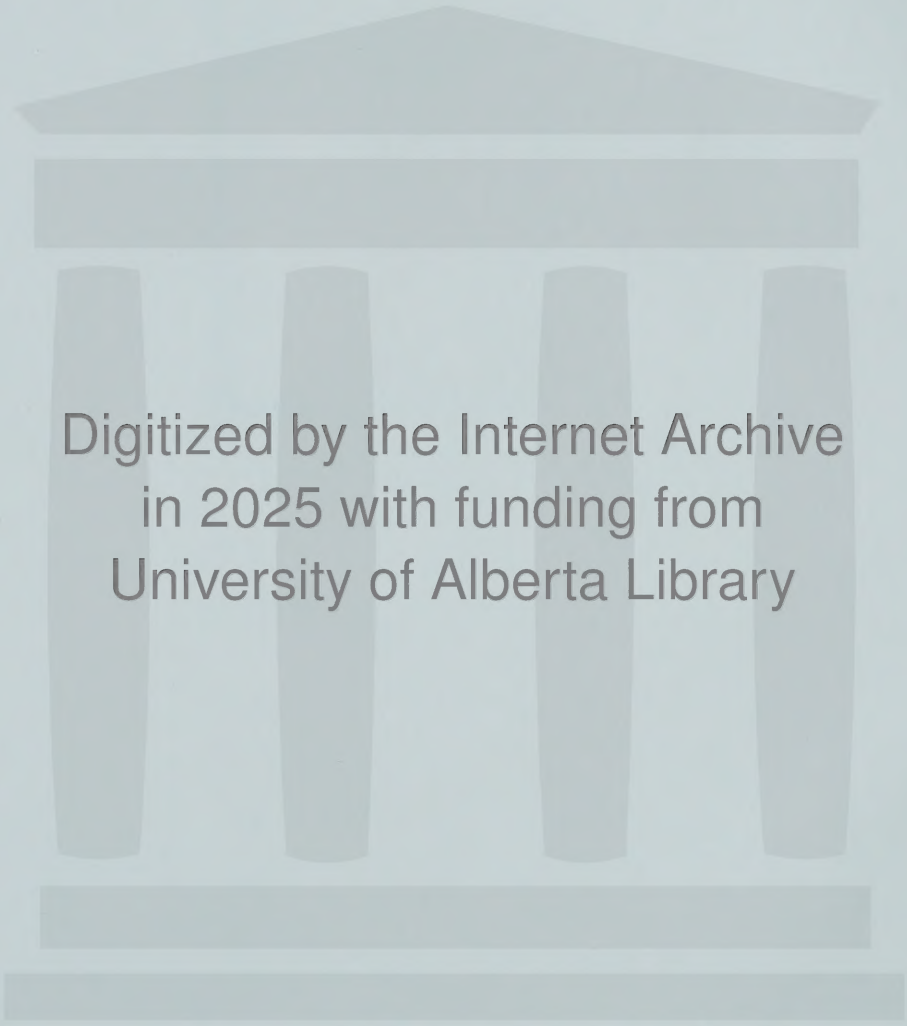

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MEDIA INFLUENCE

BODY IMAGE

FEAR OF FAT

ANXIETY

DEPRESSION

OBSESSION

DIET. DIET. DIET.

CONTROL. CONTROL. CONTROL.

BINGE & PURGE

GUILT & SHAME

BULIMIA

IT'S A SECRET

IT'S A CYCLE

HELP ME

DIET. DIET. DIET.

CONTROL. CONTROL. CONTROL.

SELF-STARVATION

MORE DISTORTION

ANOREXIA

I'M DISAPPEARING

I'M DYING

help me

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KNOWLEDGE OF AND ATTITUDES TO EATING DISORDERS AMONGST EDUCATIONAL PSYCHOLOGY GRADUATE STUDENTS

by

SUZANNE IRENE WORTHINGTON-WHITE

A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfillment of the requirements for the degree of MASTER OF EDUCATION

in

COUNSELLING PSYCHOLOGY

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled KNOWLEDGE OF AND ATTITUDES TO EATING DISORDERS AMONGST EDUCATIONAL PSYCHOLOGY GRADUATE STUDENTS submitted by SUZANNE IRENE WORTHINGTON-WHITE in partial fulfillment of the requirements for the degree of MASTER OF EDUCATION in COUNSELLING PSYCHOLOGY.

ABSTRACT

That eating disorders are a health-care concern in North America is indisputable, and there is a growing body of inquiry into whether helping professionals are trained to deal with these issues. This descriptive survey study explores educational psychology graduate students' knowledge of and attitudes toward anorexia nervosa (AN) and bulimia nervosa (BN). The importance of including eating disorder education at the graduate training level is emphasized by the findings that, although the 69 participants were able to distinguish most of the behaviours consistent with a DSM-IV diagnosis, the respective mean knowledge scores for AN and BN demonstrate that many of these psychologists-in-training were *not* able to aptly describe these disorders. Further, subgroup comparisons revealed greater knowledge, liking, and confidence amongst the students with greater amounts of training or experience. Additional attitudinal and knowledge indicators were also considered in this research.

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Chapter I: Introduction

Rationale for the Study

Body image, dieting, and eating disorders are familiar topics in both media and popular culture, and they are also cause for concern amongst educators. Acknowledging the daily bombardment of slender and fit 'ideal' body images is unavoidable, and facing the fallout is inevitable. Sociologist Reginald Bibby's (2001) recent book on Canadian teens supports the view that one of today's most troubling developmental trends is the tendency for girls to suffer from low self-esteem, to be preoccupied with their appearance, and to use unhealthy means to maintain or achieve the desired change. He also notes that boys, who have historically been viewed as 'immune' to this phenomenon, are showing increased susceptibility. Moreover, these affects of media are further augmented in the marketplace, where dieting books and dieting products abound.

In a review of epidemiologic studies, Hsu (1996) concluded that dieting is a major risk factor for the development of an eating disorder, whereby prevalence of eating disorders and dieting behaviours do appear to increase consecutively. In a survey of 125 female eating disorder outpatients in Sweden, Nevronen & Broberg (2000) discovered that eating disorder patients themselves feel that an amalgamation of interpersonal and weight-related problems, in concert with dieting behaviour, constitutes the main risk factor for the emergence of eating disorders. If this is indeed a growing trend, the implications for accessibility to care are current and important. That is, are health professionals equipped to deal with these issues?

Whether anorexia nervosa (AN) and bulimia nervosa (BN) have increased in frequency and will continue to do so is open to debate. Some reviews of the epidemiological data for both disorders have resulted in conclusions of rate stability (e.g., Fombonne, 1995a, 1995b; Tostrup, 1990), while others have reported support for a marked increase (e.g., Lucas, Crowson, O'Fallon, & Melton, 1991, 1999; Hoek, 1993; Wakeling, 1996; Hsu, 1996; Turnbull, Ward, Treasure, Jick & Derby, 1996). Altogether, the evidence on AN prevalence seem to indicate that, while overall rates have not increased dramatically, there does appear to be a long-term increasing trend among 15- to 24-year-old females. In regards to BN, Turnbull et al. (1996) screened the General Practice Research Database for newly diagnosed eating disorder cases and revealed a threefold increase in the reports of bulimia from 1988 to 1993. They also noted the limitations of eating disorder prevalence research, where "it is impossible to disentangle increased incidence from increased recognition" (1996, p. 713).

Thus, while the growth/stability controversy demands further examination, the existence of these disorders remains a certainty. The current estimates of eating disorder population prevalence range from 1 per cent to 2 per cent, but have been reported as high as 18.6 per cent amongst college students for BN (Pope, Hudson, Yurgelun-Todd & Hudson, 1984), and from 0.5 per cent to 4 per cent for AN (e.g., Nobakht & Dezhkam, 2000; Rooney, McClelland, Crisp & Sedgwick, 1995; Shekter-Wolfson, Woodside & Lackstrom, 1997). It is also documented that approximately 50 per cent of anorexic clients will develop bulimia (Costin, 1997). Males are generally reported to account for only 5-10

percent of AN and 10-15 per cent of BN diagnoses, whereas women constitute 85-95 percent of reported AN and BN cases (Braun, Sunday, Huang, & Halmi, 1999). The features of the disorders between genders have been documented as remarkably similar (Olivardia, Pope, Mangweth & Hudson, 1995).

It is also important to note that most researchers in this field agree that the secretive nature of eating disorders means that a large number of cases are not diagnosed. This further complicates prevalence estimates because (a) self-report measures are typically used to determine whether or not an eating disorder exists, and (b) high rates of psychiatric comorbidity mean that the eating disorder could be "hidden" by other presenting issues (Kutcher, Whitehouse, & Freeman, 1985). Implications of the seriousness of underreporting and underdiagnosing are manifest in two ways. First, there is a funding and resources issue. As long as eating disorders are underreported and underdiagnosed there will be less funding available for treatment and training in this area. That is, underreporting means that training for helping professionals is limited. The second implication is the mortality issue. Anorexia nervosa has been noted as having the highest mortality rate of all the psychiatric illnesses, where crude mortality rates range from 4 to 18 per cent (e.g., Herzog, Greenwood, Dorer, Flores, Ekeblad, Richards, Blais, & Keller, 2000; Herzog, Nussbaum & Marmor, 1996; Hsu, 1991; Neumarker, 2000). For bulimia nervosa there is less long-term research, and therefore fewer reported mortality rates; however, recent calculations put the crude mortality rate at 2.4 per cent (Crow,

Praus, & Thuras, 1999). Without proper diagnosis and treatment, many of these individuals will die.

A review of the literature reveals that few studies have explored the status of knowledge level and attitudes to eating disorders. Located research has looked at eating disorder knowledge and attitudes among students (Smith, Pruitt, Mann, & Thelen, 1986), the general public (Butler, Slade, & Newton, 1990; Huon, Brown & Morris, 1988; Murray, Touyz & Beumont, 1990;), school counsellors (Price, Desmond, Price & Mossing, 1990), therapists (Burket & Schramm, 1995), various health professionals (Blum & Bearinger, 1990; Brotman, Stern & Herzog, 1984; Fleming & Szmuckler, 1992; Morgan, 1999), and eating disorder experts (Butler, Slade, & Newton, 1990). It would also be important to pursue this investigation with graduate students undergoing educational psychology training because (a) little is known of student psychologists' eating disorder-related knowledge and attitudes , and (b) it is very likely that, as future clinicians, they will come into contact with eating disorder clients in their professional lives.

Clearly, an awareness of eating disorder risk factors could enhance a psychologist's ability to detect this disorder, and knowledge of treatment efficacy will enable them to use the appropriate interventions. Determining whether this knowledge exists is an important first step in planning resource allocation for both eating disorder educators and for psychologist training programs. It is also a step toward enabling the educational psychology community to be more proactive and take responsibility for addressing the issue of patient underreporting by determining whether eating disorders could be adequately diagnosed,

anticipated, or understood by new psychologists. That is, until a baseline measure of these factors is ascertained it is difficult to determine whether current training is appropriate or accurate. Further, attitudinal information may highlight the amount and type of eating disorder education most suitable for graduate level students. For example, perhaps students will show positive attitudes but low knowledge levels, revealing a need for some basic information. And if negative attitudes towards eating disorder clients are expressed, education could be directed toward alleviating students' concerns.

Purpose of the Study

This is a descriptive study intended to determine graduate-level educational psychology students' knowledge of and attitudes toward anorexia nervosa and bulimia nervosa, and to investigate the relationship between these measures and the following variables: age, program (counselling or other), academic status (Masters or Ph.D.), experience with these eating disorders (clients, personal contact, and training), and attitudes to other mental health concerns (suicidal ideation and drug or alcohol addictions). A subsidiary objective was to raise trainees' awareness of the importance of eating disorders through their participation in the survey.

The present study was designed to examine five research questions. While investigators have sought information about the knowledge level and attitudes to eating disorders among various populations, virtually no research has been conducted regarding psychologists in training. The five questions of interest are as follows:

1. What is the level of eating disorder knowledge amongst educational psychology graduate students?

2. What are educational psychology graduate students' attitudes regarding potential causes of and effective treatments for eating disorders?

3. What are educational psychology graduate students' attitudes toward eating disorder clients?

4. What are educational psychology graduate students' attitudes toward disordered eating behaviours?

5. Do any differences in level of knowledge or attitudes exist amongst the participants in regards to demographic variables (e.g., gender, age, program, education level, experience with eating disorders) specific to this population?

Overview of the Study

Chapter Two contains a review of selected literature on the topics of eating disorders, counsellor training, and knowledge and attitudes towards these disorders. In Chapter Three the methodology employed in the study is described, including a description of the sample, the research instrument, and the data collection and analysis procedures used. The results of the analyses are presented in Chapter Four, and Chapter Five includes a discussion of the findings, limitations of the study, suggestions for further research, implications for counselling psychology education, and concluding remarks.

Chapter II: Literature Review

This chapter is intended to provide background information essential to positioning the current study within the various areas of research with which it is associated. These include research on eating disorders, attitudes, and counsellor development. Because of the vast amount of literature published on each topic, the reviews have, by necessity, been limited to highlighting work most relevant to the current questions under investigation.

First, anorexia nervosa (AN) and bulimia nervosa (BN), as conceptualized for this exploratory study, will be defined. Following this will be a discussion addressing comorbidity, etiology, course, outcome predictors, and treatment. The next section will include a brief review of the current status of counsellor training followed by considerations specific to eating disorder training. And, finally, relevant attitude assessment research will also be reviewed.

Overview of the Eating Disorders

Diagnostic Criteria

It is commonly agreed that eating disorders, particularly bulimia nervosa, pose a diagnostic challenge (see Garfinkel, Kennedy & Kaplan, 1995; Levitt, 1992, and McKenna, 1989 for overview), and this is further emphasized by research exposing just how elusive they can be. For example, Thornton, Russell, & Hudson (1998) found a significant disagreement between the Composite International Diagnostic Interview (CIDI) and the clinical diagnoses of eating disorders for 44 consecutive admissions to an eating disorders unit in an Australian university psychiatric clinic. Of these, the CIDI missed 12 diagnoses

of anorexia nervosa. Further, Kutcher, Whitehouse & Freeman (1985) interviewed a large population of hospitalized psychiatric patients and revealed an eating disorder prevalence rate of 20.2 per cent. This is most interesting considering that 68 per cent of these eating disordered patients (which included 80 per cent of the BN sufferers) had not been identified as such through their hospital diagnoses.

There are several well-established instruments utilized for eating disorder assessment (see Heffernan, 1995; and Cooper & Fairburn, 1987 for reviews), but some authors dispute the validity or reliability of using the current diagnostic schemes (e.g., Nicholls, Chater, & Lask, 2000; Waller, 1993). Waller (1993), for example, suggests a 'scientist-practitioner' model that allows for less rigid adherence to DSM-IV criteria. Further, Ortega, Waranch, Maldonado, & Hubbard (1987) performed a comparative analysis of self-report measures of bulimia nervosa and concluded from the observed discrepancies that multiple measures of BN assessment should be utilized by researchers and therapists alike. Regardless of method, a basic understanding of DSM-IV diagnostic criteria is considered essential to identifying eating disorder clients. The first research question in this study will ask for the level of eating disorder knowledge amongst graduate level psychologists-in-training using DSM-IV criteria as the scoring standard.

Anorexia nervosa. DSM-IV criteria (American Psychiatric Association, 1994) for anorexia nervosa are listed in Table 1. These criteria delineate the profile of an individual who refuses to maintain normal range body weight, has an

intense fear of fat, is experiencing a disturbance in the way in which his/her body weight or shape is experienced, and, if female, she is experiencing amenorrhea. These criteria are similar to those of the ICD-10 (World Health Organization, 1992), with the addition of a subtyping classification system. By DSM-IV standards, an individual is either diagnosed as a *binge-eating/purging type* (with regular episodes of binge eating and purging behaviour) or as a *restricting type* (binge eating and purging does not occur regularly). This distinction is based on evidence that the binge-eating/purging anorexics tend to have stronger personal and family history of obesity and higher rates of so-called impulsive behaviours, including stealing, drug abuse, self-mutilations, and mood lability (e.g., DaCosta & Halmi, 1991; Wilson, Heffernan, & Black, 1996).

Bulimia nervosa. DSM-IV criteria (American Psychiatric Association, 1994) for a diagnosis of bulimia nervosa are listed in Table 2. This profile includes the behavioural criterion of recurrent episodes of binge eating and inappropriate compensatory behaviours (e.g., self-induced vomiting, excessive exercise), a definition of a binge (large quantity of food consumed in a discrete period of time *with* a sense of lack of control over eating), a self-evaluation component, and a distinction from episodes of anorexia nervosa. The DSM-IV definition of bulimia nervosa is noted to be superior to the ICD-10 (World Health Organization, 1992) on several points, which include defining a binge, acknowledging the loss of control, and noting that weight and shape strongly influence sense of self (Wilson et al., 1996). The more 'complete' DSM-IV criteria also integrates categorization as either a *purging type* or *nonpurging type*,

which is based on findings of predictive validity where patient clusters representing these subtypes differed on outcome (e.g., Wilson et al., 1996; Hay & Fairburn, 1998).

Table 1

DSM-IV Diagnostic Criteria for Anorexia Nervosa

Anorexia Nervosa

A. Refusal to maintain body weight at or above a minimally normal weight for age and height (e.g., weight loss leading to maintenance of body weight less than 85 per cent of that expected; or failure to make expected weight gain during period of growth, leading to body weight less than 85 per cent of that expected).

B. Intense fear of gaining weight or becoming fat, even though underweight.

C. Disturbance in the way in which one's body weight or shape is experienced, undue influence of body weight or shape on self-evaluation, or denial of the seriousness of the current low body weight.

D. In postmenarcheal females, amenorrhea, i.e., the absence of at least three consecutive menstrual cycles. (A woman is considered to have amenorrhea if her periods occur only following hormone, e.g., estrogen, administration.)

Specify type:

Restricting Type: during the current episode of Anorexia Nervosa, the person has not regularly engaged in binge-eating or purging behaviour (i.e., self-induced vomiting or the misuse of laxatives, diuretics, or enemas)

Binge-Eating/Purging Type: during the current episode of Anorexia Nervosa, the person has regularly engaged in binge-eating or purging behaviour (i.e., self-induced vomiting or the misuse of laxatives, diuretics, or enemas)

Note. From Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (p. 544-550), by American Psychiatric Association, 1994, Washington, DC: American Psychiatric Association.

Table 2

DSM-IV Diagnostic Criteria for Bulimia Nervosa

Bulimia Nervosa

A. Recurrent episodes of binge eating. An episode of binge eating is characterized by both of the following:

(1) eating, in a discrete period of time (e.g., within any 2-hour period), an amount of food that is definitely larger than most people would eat during a similar period of time and under similar circumstances

(2) a sense of lack of control over eating during the episode (e.g., a feeling that one cannot stop eating or control what or how much one is eating)

B. Recurrent inappropriate compensatory behaviour in order to prevent weight gain, such as self-induced vomiting; misuse of laxatives, diuretics, enemas, or other medications; fasting; or excessive exercise.

C. The binge eating and inappropriate compensatory behaviors both occur, on average, at least twice a week for 3 months.

D. Self-evaluation is unduly influenced by body shape and weight.

E. The disturbance does not occur exclusively during episodes of Anorexia Nervosa.

Specify type*:*

Purging Type: during the current episode of Bulimia Nervosa, the person has regularly engaged in self-induced vomiting or the misuse of laxatives, diuretics, or enemas.

Nonpurging Type: during the current episode of Bulimia Nervosa, the person has used other inappropriate compensatory behaviours, such as fasting or excessive exercise, but has not regularly engaged in self-induced vomiting or the misuse of laxatives, diuretics, or enemas.

Note. From Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (p. 544-550), by American Psychiatric Association, 1994, Washington, DC: American Psychiatric Association.

Comorbidity

Awareness of prevalent comorbid issues should increase counsellors' diagnostic capabilities and treatment efficacy in their work with anorexic or bulimic clients. Lifetime prevalence studies indicate that individuals with eating disorders are very likely to experience symptoms associated with other psychological disorders throughout their lifetime. Comorbid diagnoses commonly associated with both BN and AN include depression, substance abuse, anxiety, and personality disorders (see Braun, Sunday & Halmi, 1994; Herzog, Nussbaum, & Marmor, 1996; and Wilson, Heffernan, & Black, 1996 for overview).

Depression. The relationship between mood and eating disorders is complex. Of the many attempts to explain it, theorists have suggested (a) that abnormal eating behaviours serve as methods to regulate depressive symptomatology, (b) that depressive symptomatology is a result of abnormal eating behaviour, and (c) that depression and abnormal eating are independent reactions to shared risk factors (see Anderson, 1996; Devlin & Walsh, 1989; Gruber & Dilsaver, 1996; Stice & Agras, 1999; and Wilson, 1987 for reviews). The multiple interactions between these disorders are expressed in the frequency of comorbidity. Major depressive episodes have been reported with lifetime prevalence rates ranging from 36 per cent to 81 per cent among anorexics (Herzog et al., 1996) and between 36 per cent and 70 per cent among bulimics (Halmi, 1995). In a recent investigation of psychiatric comorbidity and eating disorders amongst adolescents, Zaider, Johnson, & Cockell (2000) discovered that, contrary to the adult literature linking major depressive episodes

to AN and BN, dysthymia was the affective diagnosis most often associated with eating disorder symptomatology for North American teens. Regardless of severity, some form of depression has been associated with anorexia nervosa since at least the 1950's (Halmi, 1995) and with bulimia nervosa since its diagnostic inception (Russell, 1979).

Substance abuse. Some authors have suggested that eating disorders (particularly bulimia or binge eating disorders) are a form of addiction (e.g., Levitt, 1992), but the evidence of such is logically confounded by several factors, not the least of which being that food is required for sustenance. Substance abuse, however, is a frequent comorbid diagnosis with eating disorders, where lifetime prevalence rates have been reported in the range of 6.7 per cent to 23 per cent for AN clients (Wilson et al., 1996) and between 9 per cent and 55 per cent for those with BN (Herzog et al., 1996). The stronger association between BN and substance abuse is congruent with a 'binge-eating disorder as an addiction' hypothesis. Mitchell, Specker and de Zwaan (as cited in Herzog et al., 1996) caution, however, against overgeneralizing similarities between the two (e.g., craving, lack of control, denial) and incorrectly concluding that BN and substance abuse are simply different manifestations of addiction. That is, the link between substance abuse and eating disorders is yet to be explained.

Anxiety disorders. Anxiety disorders are also frequently comorbid with anorexia and bulimia (see Bulik, 1995, for overview). Halmi (1995) concluded from past research that anxiety disorders exist for at least 40 per cent of those suffering from anorexia nervosa, and lifetime prevalence rates have recently

been reported as high as 83 per cent among those with AN and 71 per cent for those with BN (Godart, Flement, Lecrubier, & Jeammet, 2000). Some researchers have found that the anxiety disorder predates the onset of the eating disorder (e.g., Fahy, Osacar, & Marks, 1993; Godart et al., 2000), leading to the conclusion that an anxiety disorder may be a risk factor for developing an eating disorder. Of these ailments, obsessive-compulsive disorder (OCD), social phobia, generalized anxiety disorder, panic disorder, and post-traumatic stress disorder are most often associated with AN and BN (e.g., Bulik, 1995; Bushnell, Wells, McKenzie, Hornblow, Oakley-Browne & Joyce, 1994; Godart et al., 2000; Halmi, 1995; Herzog et al., 1996; Striegel-Moore, Garvin, Dohm, & Rosenheck, 1999; Wilson et al., 1996).

Personality disorders. Research findings regarding the association between eating disorders and personality disorders have been wide-ranging, where comorbid personality disorders have been reported to be present for 20 per cent to 80 per cent of AN clients and between 22 per cent and 77 per cent for BN clients (Halmi, 1995; Herzog et al., 1996). Zaider et al. (2000) noted that, in addition to depressive and obsessive-compulsive symptomatology, schizotypal, borderline, and narcissistic personality disorders are prevalent among adolescents with eating disorders. Comorbid borderline and avoidant personality disorders have been observed in females with eating disorders in a psychiatric hospital (Grilo, Levy, Becker, Edell, and McGlashan, 1996), and Streigel-Moore et al. (1999) also reported borderline personality disorder as a significant comorbid diagnosis among hospitalized female anorexic and bulimic veterans.

After investigating comorbidity for each of the eating disorders independently, Braun et al. (1994) found that cluster B disorders (antisocial, borderline, histrionic, and narcissistic) were more likely among BN than AN patients, but they found no difference in the comorbid presence of cluster C disorders (avoidance, dependent, obsessive-compulsive, and passive-aggressive). Others (e.g., Herzog et al., 1992) have found clear associations between borderline personality disorder and BN (see also Smith, Marcus, & Eldredge, 1994) and cluster C disorders with AN. Thus, although there is evidence of comorbidity among eating disorder and personality disorder symptomatology, the exact relationships are still unclear.

Etiology

One of the first logical steps to treating or preventing a health problem is to determine what causes it. In the area of eating disorders, this task has been formidable. There are a multitude of theories addressing the causes and/or factors that increase the risk of developing BN or AN, and this multiplicity does not easily lend itself to the rigors of creating a useful causal model. These factors, to note a few, include *dieting* (e.g., Hsu, 1996; Nevronen & Broberg, 2000), *gender* (e.g., Bulik, 1998; de Groot, 1994; Kilbourne, 1994), *societal pressures and trends* (e.g., Kilbourne, 1994; Murray, Touyz, & Beaumont, 1996; Rosen, 1990; Streigel-Moore, Silberstein, & Rodin, 1986), *familial and genetic factors* (e.g., Dykens & Gerrard, 1986; Fairburn, Cowen, & Harrison, 1999; Fairburn, Welch, Davies & O'Connor, 1997; Stein, Lilenfeld, Plotnicov, Pollice, Rao, Strober, & Kaye, 1999), *comorbid mood, anxiety or personality disorders*

(e.g., Braun et al., 1994; Godart et al., 2000; Herzog et al., 1992; Stice & Agras, 1999; Zaider et al., 2000), *personality characteristics* (e.g., Bulik, 1998; Rogers & Petrie, 2001; Troop & Treasure, 1997), *parental or comorbid substance abuse* (e.g., Boumann & Yates, 1994; Braun et al., 1994; Dykens & Gerrard, 1986; Evans & Lacey, 1992; Grilo et al., 1996; Streigel-Moore et al., 1999), and *sexual abuse* or other *traumatic life events* (Neumark-Sztainer, Story, Hannan, Beuhring, & Resnick, 2000; Troop & Treasure, 1997; Welch, Doll & Fairburn, 1997). In an essay discussing the causality challenge, Campbell (1995) succinctly characterizes the status quo:

> Are we looking for one or more unitary mechanisms as necessary causal conditions, or must we be content to strive for some way of understanding in causal terms a multifactorial, interactive mass of disparate elements and systems which will encompass genetic predispositions, individual physiology, personality development, social stresses, family processes, cultural circumstances and prevailing fashions and *mores*? (p. 51)

Of the five research questions addressed in this study, the second will look at educational psychology graduate students' opinions as to the potential relevance of causal factors that have been previously researched with students, the general public, and health professionals (Fleming and Szmuckler, 1992; Huon, Brown & Morris, 1988; Smith, Pruitt, McLaughlin, & Thelen, 1986).

Course and Outcome for Anorexia Nervosa

Anorexia nervosa usually commences in late adolescence, and there is evidence of bimodal age of onset peaks at 14 and 18 years (American Psychiatric Association, 1994). Recent findings indicate that this may be shifting, where anorexia is affecting older women as well (Dorian & Garfinkel, 1999). It is well documented that the onset of AN is often associated with a stressful life event (American Psychiatric Association, 1994), but the course and outcome are highly variable (e.g., Fichter & Quadflieg, 1999; Herzog, Dorer, Keel, Selwyn, Ekeblad, Flores, Greenwood, Burwell, & Keller, 1999). The complexity of issues an anorexic faces is indicated in the aforementioned causality conundrum, and this is further evidenced in several distinct modes of recovery. Some individuals will recover after a single episode, some display an intermittent pattern of recovery and relapse, some gain weight but continue to display bulimic symptoms, and others never recover.

There are also many serious physical complications that can result from AN behaviours, including cardiac abnormalities, kidney or renal dysfunction, cerebral atrophy, abnormal thyroid functioning, osteoporosis, peptic ulcers, infertility, hair loss, anemia, bone marrow suppression, dizziness, poor motor control, gingivitis, and periodontal disease (see Gleaves, Miller, Williams & Summers, 2000; Treasure, 1991, and Treasure & Szmuckler, 1995, for overview). In a long-term follow-up study, Theander (as cited in Herzog et al., 1996) estimated that up to 18 per cent of individuals who struggle with anorexia nervosa will die from suicide or medical complications of the disorder.

Course and Outcome for Bulimia Nervosa

Bulimia nervosa usually initiates in late adolescence or early adult life and often develops during or after an episode of dieting (e.g., Hsu, 1996; Nevronen & Broberg 2000). It is frequently considered a chronic disorder because the majority of sufferers exhibit episodes of recovery and relapse over many years (e.g., Keel & Mitchell, 1997; Keller, Herzog, Lavori, Bradburn, & Mahoney, 1992; Herzog et al., 1999). Keller et al. (1992), for example, followed the course of BN among 30 women over 3 years and calculated a 50 per cent relapse rate after initial recovery and a 63 per cent cumulative probability of relapse by 78 weeks.

Medical complications are also prevalent with BN (and are similarly found in AN clients who purge). These can include gastrointestinal problems, esophageal perforation, swollen salivary glands, erosion of tooth enamel, colon dysfunction, dehydration, and electrolyte imbalance leading to cardiac dysfunction, (Gleaves et al., 2000; Treasure, 1991). Because BN is a relatively new disorder, long-term research is less prevalent, thus the long-term outcome remains dubious (e.g., American Psychological Association, 1994; Keel & Mitchell, 1997). There is, however, a definite outcome distinction between the eating disorders, where the prognosis for BN clients is far more optimistic. For example, in a 7.5-year follow-up study of both AN and BN, Herzog et al. (1999) found that the course of AN tends to result in low rates of full recovery and high rates of partial recovery, while BN has higher rates of both partial and full recovery. The third research question in this study will look at educational

psychology graduate students' estimates of eating disorder recovery rates as one of several indicants of their attitudes to eating disorder clients.

Outcome Predictors for Anorexia Nervosa and Bulimia Nervosa

For each of the disorders there are several well-documented outcome predictors. With regards to AN, poorer outcome has been related to longer duration of illness, purging behaviour, very low body weight, early age of onset, personality disorder, social difficulties, longer duration of hospitalization, more frequent hospitalization, and a disturbed relationship with the family (Herzog et al., 1996; Treasure, 1991; Walford & McCune, 1991). Among BN clients, poor treatment response has been associated with lower pretreatment self-esteem, greater symptom severity, lower body mass index, early age of onset, extreme weight fluctuations, premorbid or parental obesity, higher incidence of personality disorders, lack of social supports, lower social class, low treatment motivation, and co-morbid or parental alcoholism (e.g., Fahy & Russell, 1992; Fairburn, Kirk, O'Connor, Anastasiades, & Cooper, 1987; Fairburn, Norman, Welch, O'Connor, Doll, & Peveler, 1995; Herzog et al., 1996; Lacey, 1984; Treasure, 1991). These are important characteristics for treatment providers to be aware of as they can be utilized to modify a therapist's expectations and treatment plan.

Treatment for Anorexia Nervosa

Treatment objectives with AN clients are to restore normal range body weight and healthy eating habits and to resolve any personal or interpersonal issues that may be perpetuating the symptomatology (Wilson & Fairburn, 1998). Because many serious physical complications result from anorexic behaviours,

hospitalization is often a necessary component of the treatment plan. Thus, anorexia nervosa typically requires a multidisciplinary approach in order to achieve said goals. Overall, results of all treatment types are modest to moderate, as indicated in the previous discussion regarding the disheartening long-term outcome for this disorder. Furthermore, conclusive research on this topic is scarce, which is likely a reflection of the treatment resistance and low incidence of this disorder (Loeb & Wilson, 1998). Several thorough critical reviews are currently available (e.g., Peterson & Mitchell, 1999; Pyle, 1999; Shekter-Wolfson, Woodside, & Lackstrom, 1997; Wilson & Fairburn, 1998; Yager, 1989), and this section will highlight the main findings regarding the various treatment modalities discussed in the literature.

Weight gain is usually met successfully via inpatient nutritional counselling and behavioural therapy (Wilson & Fairburn, 1998), and the addition of pharmacotherapy has generally been found to have no added benefit to either initial weight gain or subsequent maintenance (Devlin & Walsh, 1995; Johnson, Tsoh, & Varnado, 1996; Kennedy & Goldbloom, 1994). Recently, however, fluoxetine (a serotonin reuptake inhibitor) has been noted to confer some relapse prevention benefits, advocating further research in this area (Peterson & Mitchell, 1999). Because gaining AN client cooperation during the weight-gain stage can be enormously challenging (Hsu, 1986), the ethics of refeeding and compulsory treatment are tenacious issues for health professionals to be aware of (see Rathner, 1998; and Touyz, 1998, for discussion).

In regards to AN outpatient treatment, there is evidence that family therapy is helpful with adolescent clients, but Steinhausen (1997) warns that contraindications to the success of this approach include such factors as chronicity, abuse issues, and severity of family dysfunction. Persuasive evidence as to the efficacy of other treatments is still being sought, and reviewers have suggested that the success of cognitive behaviour therapy (CBT) in treating BN promotes the potential benefits of CBT for AN (e.g., Loeb & Wilson, 1998; Peterson & Mitchell, 1999). Serfaty, Turkington, Heap, Ledsham & Jolley (1999) recently compared the effects of cognitive therapy to dietary counselling in treating anorexia nervosa. They found that cognitive therapy considerably enhanced the engagement and recovery processes, where the cognitive therapy patients had significant changes in Body Mass Index and scores on the Eating Disorder Inventory, Beck Depression Inventory and Locus of Control of Behaviour measures.

Treatment for Bulimia Nervosa

Goals of treatment for BN are to establish healthy eating habits, curb the purging behaviour, and resolve any associated psychosocial issues (Wilson & Fairburn, 1998). Diagnosis of comorbid substance abuse may be particularly relevant to a bulimic client treatment plan, where the treatment of one problem is likely to lead to the replacement by another, thus it is recommended that the range of problems and underlying psychopathology are treated collectively (Evans & Lacey, 1992). The literature addressing the treatment of BN is far more extensive than AN-related treatment research, and of the potential modalities,

cognitive-behavioural therapy has long been considered the 'gold standard' (e.g., Davis, McVey, Heinmaa, Rockert, & Kennedy, 1998; Fairburn, 1981; Leitenberg, 1995; Ordman & Kirschenbaum, 1985; Pyle, 1999; Spangler, 1999). Spangler (1999) outlines a typical CBT program whose three phases address eating patterns, beliefs about shape and weight, and preventing relapse.

That BN is amenable to other treatment modalities is revealed in research illuminating successful symptom control through *behavioural* (e.g., Laessle, Beaumont, Butow, Lennerts, O'Connor, Pirke, Touyz, & Waadt, 1991; Schmidt, 1989), *interpersonal* (Apple, 1999; Vogel & Andersen, 1994), *antidepressant* (e.g., Abbott & Mitchell, 1993; Agras, 1997; Devlin & Walsh, 1995; Herzog & Sacks, 1993; Mitchell, Raymond & Specker, 1993; Wolfe, 1995), and *group interventions* (e.g., Connors, Johnson, & Stuckey, 1984; Fettes & Peters, 1990; Kirkley, Schneider, Agras, & Bachman, 1985; McKisack & Waller, 1996; Roy-Byrne, Lee-Benner, & Yager, 1984; Zimpfer, 1990).

Reported rates of relapse do, however, indicate that reaching the goals of therapy is short-lived for at least 50 per cent of bulimic clients. Thus, the search for a "best" BN treatment is still under investigation (Mitchell, Raymond, & Specker, 1993; Mitchell, Hoberman, Peterson, Mussell, & Pyle, 1996). A sampling of alternative eating disorder treatments suggested in the literature include solution-focused approaches (O'Halloran, 1999), computerized psychoeducation (Andrewes, O'Connor, Mulder, McLennan, Derham, Weigall, & Say, 1996; Andrewes, Say, & McLennan, 1995), integration of a twelve-step program (Johnson & Sansone, 1993), and art therapy (Cleveland, 1999).

This study will look at educational psychology graduate students' opinions as to the efficacy of a variety of treatment modalities previously considered in studies with students and health professionals (Fleming and Szmuckler, 1992; Smith, Pruitt, McLaughlin, & Thelen, 1986).

Counsellor Training Review

General Counsellor Training

The literature addressing the status of counsellor training reflects the ongoing nature of these considerations. Topics of discussion include: changing affects of market forces, practitioner-educator dilemmas, utilization of empirically validated treatments, sociopolitical influences, technological innovation, evolving family structures, cultural diversity, growing populations at risk, skills-based training, theory-based training, specialty training, and supervision (e.g., Carrington, 1987; Committee on Counsellor Training, 1952; Beutler & Kendall, 1995; Ellis, 1989; Goodyear, Cortese, Guzzardo, Allison, Claiborn, & Packard, 2000; Granello & Hazler, 1998; Herr, 1991; Hollis, 2000; Osborne & House, 1995; Patton, 2000; Sawatzky, Jevne, & Clark, 1994; Sexton, 2000; Stein & Lambert, 1995; Young, 1998). Further, as a part of the evaluative process, students' opinions of the relevance and efficacy of training practices have been solicited (e.g., Birks & Brooks, 1986; Scanlon & Baillie, 1994; Seth & Vohra, 1992; Sisson & Bullis, 1992). For example, Birk and Brooks (1986) surveyed 300 recent doctoral graduates from counseling psychology to determine if they felt their training was adequate for the competencies necessary in employment. Overall, the discrepancies between job importance and training adequacy were deemed acceptable, but less traditional

areas (consultation, program development, and special populations) were noted as lacking.

Although these and similar issues have been further addressed and suggested for curricular updates (e.g., Margolis & Rungta, 1986; Ivey & Rigazio-DiGilio, 1991), an emphasis on improving counsellor education is still necessarily a focus of attention. After over a decade of ongoing data collection from American academic counsellor preparation programs, Hollis (2000) reported that attention given to multicultural issues is becoming more pronounced and that current national trends in course offerings include computer technology, substance abuse, marriage and family counselling, and legal and ethical issues. Among the multitude of 'specialty' course offerings listed, eating disorders was not mentioned.

Counsellor Training and Eating Disorders

Psychologists play an important role in the treatment of eating disorders. They can function as a part of collaborative treatment teams, as purveyors of prevention and psychoeducation, as diagnosticians, as resource referrals, and as the primary therapists. That specialized training is a necessity is also quite certain, for the challenges that these clients bring to the therapeutic relationship are both unique and complex (see Franko & Rolfe, 1996; Frey, 1984; and Sargent, 1992 for overview). For example, in a discussion of guidelines for the supervision of counsellors working with eating disorder groups, DeLucia-Waack (1999) highlighted the prevailing counter-transference issues between therapist and client. These can manifest as counsellor over-identification with the client issues, loss of control leading to power struggle, and feelings of helplessness,

ineffectiveness, and inadequacy. Consequently, eating disorder researchers have submitted a plea for compulsory basic eating disorder education with all health professionals who may come into contact with this population (e.g., Arnow, 1999; Berg & Hodes, 1997; Crow, Mussell, Peterson, Knopke, & Mitchell, 1999; Michalsen, 1990; Treasure, Troop & Ward, 1996). Further, Arnow (1999) and Crow et al. (1999) both recently emphasized the need for including empirically supported therapeutic methods in the training programs. Information regarding the required base of knowledge for training is available (e.g., Sargent, 1992; Yager & Edelstein, 1987), and suggested didactic approaches include supervision (DeLucia-Waack, 1999), a two-year part-time postgraduate program (Buhl, 1993), and integration into the graduate school curriculum via gender studies (Dupuy, Ritchie, and Cook, 1994; Mintz, Rideout, & Bartels, 1994). Gender studies are a logical vehicle for eating disorder education, but unfortunately this area appears to be losing priority for graduate counsellor training programs - Hollis (2000) reported that the anticipated addition of a gender studies course was lower in 1999 than in 1996.

In the early 1980s most American psychiatrists and psychologists acquired their knowledge of anorexia nervosa from experience treating it rather than from formal lectures or workshops (Whyte & Kaczkowski, 1983). The advancement of eating disorder knowledge since this time has been immense; however, this does not necessarily mean that the subject of training has had sufficient attention paid to it, nor that it has been regarded with sufficient interest. Less than half of the female (and even fewer male) residents from Canadian

psychiatric training centres showed moderate to marked interest in working with eating-disordered patients, and only 22 per cent reported that knowledge on the topic had been adequately provided to them at medical school (Ghadirian & Leichner, 1990). Further, a variety of health professionals were surveyed regarding their perceptions of training and competencies to work in adolescent health care. Perceived limitations in working with eating disorders were reported by 54.5 per cent of the physicians, 64.2 per cent of the psychologists, 48.8 per cent of the nutritionists, and 66.7 per cent of the social workers. Excessive time demand and insufficient training were the most frequently sponsored barriers to service delivery, with insufficient training being the most significant for 46 per cent of the psychologists (Blum & Bearinger, 1990).

School counsellors also reported knowledge deficits, where 40 per cent perceived themselves as 'not very competent' to work with eating disordered students, and 75 per cent felt that it was not their role to treat these students (Price, Desmond, Price & Mossing, 1990). Further, a survey of American therapists revealed that one-third (more males than females) did not want to treat eating disorders, mainly because of feelings of frustration and lack of empathy with these patients. Therapists who were reluctant to treat eating disorder clients were also less optimistic about the prognosis than those who wished to treat them (Burket & Schramm, 1995). Willingness to treat appeared to be related to the level of knowledge about the disorders, and another essential influence on professionals' attitudes may be the degree of responsibility for the illness they ascribe to the patient or the environment (Fleming & Szmuckler, 1992). The third

question addressed in this research, exploring educational psychology graduate students' attitudes toward eating disorder clients, will include their assessments of client personal responsibility for AN and BN.

Attitude and Knowledge Review

An eating disorder may induce profound reactions in both significant others and professional helpers. Branch and Eurman (1980) asked the friends and relatives of female AN clients about their experiences, and, while 75 per cent expressed anger or frustration to the anorexic's tendency to eschew efforts to help, the overall attitude expressed was more approving than disapproving, where the majority tended to admire her appearance. Shisslak, Gray & Crago (1989) surveyed a variety of health care professionals and found that almost one-third reported being moderately to greatly affected by their work with eating disorder patients. Specifically, the affected group became more aware of food, began to eat healthier food, and became more aware of their physical condition, their weight, and their feelings about their body, clothes and appearance. Both of these studies reflect some of the challenges inherent in treating eating disorders, not the least of which are the powerful influences of sociocultural ideals.

Knowledge, Attitudes, and the General Public

The general public has long been known to hold negative attitudes toward mental illness, and Crisp, Gelder, Rix, Meltzer and Rowlands (2000) recently explored this with British adults. Eating disorders did not suffer from the negative opinions expressed to disorders like schizophrenia and alcohol or drug addictions, but more than one-third of the respondents felt that eating disorders

are self-inflicted. Further, Crisp et al. (2000) argued that reported judgements of a high likelihood of recovery may reflect an attitude trivializing these conditions.

Eating disorder knowledge has also been researched with the public. Smith, Pruitt, McLaughlin & Thelen (1986) surveyed high school and college students and found that females knew more about eating disorders than males. Moreover, while 71 per cent of the participants were able to identify the main traits of anorexia nervosa, only 44 per cent could provide an adequate definition of bulimia nervosa. Butler, Slade and Newton (1990) canvassed eating disorder experts and the general public and found that the experts' opinions tended to reflect the empirical literature and that both groups were able to adequately identify the main features of anorexia. Similarly, Murray, Touyz and Beaumont (1990) reported that, among working adults under the age of 30, nearly all had heard of anorexia but only 16 per cent of the men and 70 per cent of the women had heard of bulimia. They also observed that over one third of the women interviewed expressed that their eating disorder knowledge had affected their own eating or related outlooks in some way.

Following the first half of a two-part study, Huon et al. (1988) reported greater incidence of BN ignorance and AN knowledge amongst the general public. In the second half of this study they asked university staff and mall shoppers to rate features of anorexia and bulimia on two dichotomous dimensions, common versus uncommon and normal versus abnormal. Behaviours involving eating (e.g., self-induced vomiting, chewing food and spitting it out) were rated most frequently as both uncommon and abnormal,

while concerns with body weight and shape were least frequently judged as abnormal and uncommon. Interestingly, many of the behaviours were more often judged uncommon than abnormal, and "binge eat regularly" was rated as unlike the majority by 91 per cent but abnormal by only 66 per cent. The current research will utilize a modified version of this survey to look at graduate student's perceptions of the normalcy of disordered eating behaviours.

Knowledge, Attitudes and Health Professionals

Studying the emotional reactions of medical residents, Brotman, Stern, and Herzog (1984) illustrated that anorexia nervosa patients tend to generate more anger, stress and helplessness than do diabetic and obese patients. Compared to their colleagues in medicine and paediatrics, psychiatric residents reported more negative affects and a higher awareness that their emotions affected the quality of care they delivered to anorexic patients. Likewise, a recent survey of gynecologists and obstetricians in Australia and the United Kingdom (Morgan, 1999) revealed that only 20 per cent of this group were confident in diagnosing eating disorders and that 31 per cent (more men than women) held negative attitudes towards these disorders, which were judged as "abnormal behaviour in the context of a weak, manipulative or inadequate personality." Responses also revealed greater knowledge of AN than BN and greater emphasis on psychotherapy for treatment.

Fleming and Szmuckler (1992) studied the attitudes of the medical and nursing staff within a large Australian teaching hospital and found that psychiatric trainees displayed the highest level of AN knowledge and nurses the lowest.

Among those surveyed, patients with eating disorders were less liked than schizophrenic patients and were seen to bear responsibility for causing their illness almost to the same degree as recurrent overdose takers. Further, factor analysis revealed a factor by which eating disorders are viewed as self-induced by individuals vulnerable to external pressures who should enlist education, self-control and psychotherapy as treatment. This research will use a modified version of Fleming & Szmuckler's survey in order to determine the knowledge of and attitudes towards eating disorders among educational psychology graduate students.

Chapter III: Methods

Participants

The participants in this study were drawn from a sample of convenience, where the population of interest was graduate level educational psychology students. This specific group was chosen for two reasons: (a) the programs in this department are geared to preparing students as psychologists, and (b) the current questions have previously not been explored with this particular demographic.

Sixty-nine educational psychology graduate students, ranging in age from 22-59 years (M = 32.6), from a large Canadian university participated in this study. The return rate was 58.5 per cent, based on an original distribution of 118 questionnaires. Of the 69 participants, 12 (17.4 per cent) were male and 57 (82.6 per cent) were female. The majority of students were either married (49.3 per cent) or single (39.1 per cent), and of the remaining participants, seven were divorced (10.1 per cent) and one was widowed (1.1 per cent).

The sample was distributed across various areas within the educational psychology department: Counselling, Special Education, and Learning, Development and Assessment (LDA). The Counselling group is composed of students training to be counsellors or consultants in schools, colleges, university, and other counselling settings. The Special Education area is geared toward preparing students for employment as professional educators in the General Area of Special Education or in Deafness Studies. And, finally, the LDA specialty area is composed of students with a variety of assessment interests, including

developmental psychology, learning, cognition and instruction, measurement and evaluation, computer-assisted instruction, the development of intelligence, and psychopharmacology. In this study, the greatest number of participants were from Counselling (63.8 per cent), 30 of these at the Masters level and 14 in the Ph.D. program. Of the remaining students, 17.4 per cent were from Special Education (11 Masters, 1 Ph.D.), 17.4 per cent from Learning, Development, and Assessment (5 Masters, 7 Ph.D.), and one Masters student sponsored herself as 'Other'.

The majority of participants (76.8 per cent) had some counselling experience. Of the total sample, 42.5 per cent reported working with at least one client with an eating disorder, 60.9 per cent reported experience with addictions, and 73.9 per cent noted suicidal ideation client experience. Personal contact with an individual with any of these disorders was reported by 73.9 per cent for eating disorders, 73.9 per cent with addictions, and by 68.1 per cent with suicidal ideation. Training in eating disorders had been received by 24.6 per cent of the participants, training in addictions by 33.3 per cent, and training in suicidal ideation by 66.7 per cent.

Data Collection

Permission was obtained from the Faculties of Education and Extension Research Ethics Board in February of 2001. The participants were then recruited via questionnaire packages delivered to the educational psychology department of graduate studies student mailboxes. These packages invited voluntary, anonymous participation and included an information form (Appendix A), a

demographic form (Appendix B), a two-part questionnaire (Appendix C and Appendix D), and a feedback sheet (Appendix E). Participants were instructed to keep the information and feedback forms, which not only stressed the anonymous and voluntary nature of participation, but also provided some pertinent background information and a brief description of the purpose of the study. They were then asked to complete the demographic form and questionnaires on their own and to drop them in a locked campus mailbox in an enclosed envelope.

Instrumentation

Descriptions of the three questionnaire components will be delineated in the following discussion.

Demographics

A demographic questionnaire (see Appendix A) was constructed in order to gather information on participants' age, gender, marital status, area of study, academic status (Masters or Ph.D.), counselling experience, as well as their client experience, personal contact, and/or training received in regards to eating disorders (ED), alcohol or drug addiction (AD), and suicidal ideation (SI). This instrument was developed from a combination of the demographic form used by Fleming & Szmuckler (1992) plus additions and or modifications specific to the current research.

Knowledge of and Attitudes to Eating Disorders

The second part of the questionnaire (see Appendix B) is a slightly modified version of the survey that Fleming & Szmuckler (1992) utilized in their

research with medical and nursing staff in an Australian general hospital. A copy of the instrument was obtained from Dr. Fleming, and it was chosen because the questions addressed the issues put forth by the current study.

This survey first asked participants to define the main features of anorexia nervosa (AN) and bulimia nervosa (BN). They were then asked to rate the likelihood of various causes for each of four disorders (AN, BN, AD, and SI). The ratings were based on a five-point scale (1 = very likely cause, 2 = likely cause, 3 = possible cause, 4 = unlikely cause, 5 = very unlikely cause) and the causes included "emotional problem", "influence of family", "pressure from females", "pressure from males", "the media", "self-induced", and "physical problem". They were also asked to indicate a percentage estimate of the extent to which clients are responsible for their condition. Fleming & Szmuckler's disorder categories "recurrent overdose" and "schizophrenia" were changed to "alcohol or drug addictions" and "suicidal ideation" in order to increase relevance for the current participants.

The effectiveness of various treatment modalities for the four disorders were then similarly presented for rating on a five-point scale (1 = extremely effective, 2 = very effective, 3 = somewhat effective, 4 = slightly effective, 5 = not effective), and the treatments included "Psychotherapy/Counselling", "Family therapy", "Exercise", "Medication", "Religious guidance", "Hospitalization", "Education", and "Urge the client to take more self-control". The participants were also asked to estimate what percentage of the clients would eventually make a good recovery.

The last section of this questionnaire asked respondents to indicate on a five-point scale how much they "*like* working with" the four client types (1 = really like, 2 = like, 3 = do not mind either way, 4 = don't like, 5 = dislike intensely). Additionally, the current survey asked for a response to "to what extent do you *feel confident* in your ability to work with these clients" (1 = I feel very confident, 2 = I feel somewhat confident, 3 = neither confident nor lacking confidence, 4 = I feel a lack in confidence, 5 = I have no confidence). It should be noted that there was a typo in the delineation of confidence options, where they were listed as 1, 2, 3, 3, 4 (versus 1, 2, 3, 4, 5); however, participants independently accounted for this and responded appropriately. Two other items were also added to the current research, and these asked the respondents to supply a per cent estimate of population prevalence for AN and BN for each gender. The 'confidence' item was added in an effort to tap into perceived levels of competence, and the prevalence estimates were intended as an indication of the participants' judgements of eating disorder commonality and/or normalcy (i.e., higher expectations of incidence may indicate greater sensitivity towards these disorders).

Normalcy Judgements of Eating-Related Behaviours and Attitudes

The third section of this questionnaire (see Appendix D) is also drawn from Fleming & Szmuckler's (1992) work, which they adapted from Huon et al. (1988). The rationale for using this component of the questionnaire is the same rationale delineated in the previous section. The current version asked participants to rate a variety of eating related attitudes and behaviours on a scale

of 1 to 7, where 1 indicates that the behaviour is *definitely normal,* and a 7 indicates that it is *definitely abnormal* (in the sense of indicating a disorder). The major modification made to this part of the survey is that the respondents were only asked to note how normal or abnormal particular eating behaviours or attitudes are, whereas the original research also asked for judgements of commonality. The reason for not including both sections is threefold. First, it was in the interest of easing completion of an already relatively time-consuming survey. Second, the purpose of this research was more about gaining a sense of diagnostic capabilities versus judgements of commonality. And, finally, the aforementioned population prevalence estimate items were assumed to be a sufficient method of measuring the participants' opinions in regards to the commonality of the eating disorders.

Data Preparation and Analysis

The data were analyzed using the Statistical Program for the Social Sciences (SPSS 10.0.7, 1999). Demographic information was subject to descriptive statistical calculations (i.e., frequencies, M, SD). ANOVAs were calculated to determine between group differences on the dependent measures, and the Levene statistic was utilized for each of these analyses in order to ensure that the homogeneity of variance assumption was met. Statistical analyses of reliability were not appropriate for this questionnaire as it is exploratory in nature and based on individual respondents' opinions to individual items. The validity of these items is substantiated by (a) face-value content validity, (b) and that the majority of the items have been endorsed via utilization

in past research (e.g., Fleming & Szmuckler, 1992; Huon et al., 1988; Smith et al., 1986). The specific procedures used for each research question are as follows.

Research Question One: What is the Level of Eating Disorder Knowledge Amongst Educational Psychology Graduate Students?

Participants were asked to note the major features of anorexia nervosa and bulimia nervosa. One point was given for identifying the main DSM-IV criteria for each disorder, with a maximum of four. The scoring criteria for AN were "low weight", "fear of fat", "distorted body image", and "amenorrhea", and for BN they included "binge", "purge", "not exclusively during an episode of AN", and "importance of body image to self-evaluation". DSM-IV criteria for BN also includes a minimum episodes/week requirement, but this was not utilized as part of the scoring in order to maintain the same point system for each disorder. Two researchers independently scored this section and a Pearson product-moment correlation coefficient was calculated to determine inter-rater reliability. Following this, descriptive statistics (M, SD) were calculated for AN and BN, and these were subject to a paired sample t-test and a Pearson product-moment correlation calculation to determine if the measured knowledge levels were significantly different.

Research Question Two: What are Educational Psychology Graduate Students' Attitudes Regarding Potential Causes of and Effective Treatments for Eating Disorders?

Likely causes and effective treatments were assessed on a five-point scale for all four disorders (AN, BN, AD, and SI). Percentages of participants who indicated a cause to be "likely" or "very likely" and a treatment to be "very effective" or "extremely effective" were calculated for each disorder.

Research Question Three: What are Educational Psychology Graduate Students' Attitudes Towards Eating Disordered Clients?

Attitudes towards clients were assessed via seven measures. First, population *prevalence estimates* were assumed to indicate not only the participants' sense of the commonality of AN and BN, but also their level of sensitivity to these disorders, where higher estimates would indicate greater concern. Second, the extent to which the clients are held responsible for their condition (*personal responsibility)* were assumed to indicate level of tolerance toward these clients, where sponsoring 100 per cent responsibility may indicate low tolerance or less willingness to treat (e.g., Fleming & Szmuckler, 1992). Rating *"self-induced"* as a likely cause (on a five-point scale, where 1 = "very likely cause") or *"urge client to take more self-control"* as an effective treatment option (on a five-point scale, where 1 = "extremely effective") were also construed to be measures of personal responsibility. The next variable, estimates of percentage of clients who will recover, has been previously linked to attitudes towards these clients. Therapists who had low *estimates of recovery* were reluctant to treat (Burket & Schramm, 1995), and Crisp et al. (2000) noted that a high likelihood of recovery estimate might indicate a trivial attitude towards the eating disorders. The sixth and seventh items were those that indicate how

much participants '*like*' (on a five-point scale, where 1 = really like) working with eating disorder clients, and how '*confident*' (on a five-point scale, where 1 = I feel very confident) respondents are in their abilities to work with these clients.

Descriptive (M and SD) statistics were calculated for all seven items, and percentages of respondents who sponsored the various options for *"self-induced", "urge the client to take more self-control"*, and each of the '*liking*' and '*confidence*' alternatives were also calculated. To determine if there were any differences across the disorders, a univariate repeated measures ANOVA was calculated for the *personal responsibility* and *estimate of recovery* items. Also, a Bonferroni post-hoc analysis was completed in order to ascertain which of group separations were significant.

Research Question Four: What are Educational Psychology Graduate Students' Attitudes Towards Disordered Eating Behaviours?

The 32 behaviours were rated on a scale from 1 (normal) to 7 (abnormal). The judgements of normalcy were calculated as percentages of respondents who sponsored 1 or 2 (normal) and 6 or 7 (abnormal).

Research Question Five: Do any Differences in Level of Knowledge or Attitudes Exist Amongst the Participants in Regards to Demographic Variables (e.g., Gender, Age, Program, Education Level, Experience with Eating Disorders) Specific to this Population?

The demographic information collected was identified as the independent variables of this study. These are: Age; Gender; Program Status (Counselling, Other); Academic Status (Masters, Ph.D.); Counselling Experience (Yes, No);

Client Experience with ED, AD, or SI (Yes, No); Personal Contact with a person with an ED, AD, or SI (Yes, No); Training for ED, AD, or SI (Yes, No); and Location of Training received (University, Outside). In order to define any between group differences, the results for each of the first four research questions were subject to one-way analyses of variance (ANOVAs) according to each of these categorizations. Several of these variables did not fall into 'natural' categories, and the methods used to split them are as follows.

Age was split into three groups, basically by decade: 22-29 (n = 37), 30-39 (n = 17), and 40-59 (n = 16). Program Status was divided into two groups, Counselling (n = 44) and Other (LDA and Special Education combined; n = 25), because it was expected that counsellors might respond differently than students in the other specialty areas. Location of Training was split into two categories: University (i.e., class topic, course, practicum, or supervision) and Outside (i.e., professional training, workshops, unspecified, or self-directed). The intent of this research was to assess the affects of university-based training, so this split was considered appropriate.

Chapter IV: Results

In this chapter the results of the analyses are presented and discussed specifically in relation to each research question (see p. 6). Research question five, which concerned possible demographic group differences, is addressed as an extension of the results for each of the first four questions. Emphasis will be placed on findings concerning the eating disorders (ED), with selective report of results relevant to addictions (AD) and suicidal ideation (SI). That is, the AD and SI variables were utilized as a base of comparison, so only the results further expressing and/or highlighting patterns of response to the eating disorders will be reported. One-way ANOVAs were run for all of the questions requiring analysis of variance. Analysis designs incorporating more than one factor or more than a single dependent variable were not possible due to insufficient sample size.

Research Questions

Research Question One: What is the Level of Eating Disorder Knowledge Amongst Educational Psychology Graduate Students?

These items, which asked participants to define the main features of anorexia nervosa (AN) and bulimia nervosa (BN), were scored on a four-point scale by two different raters. Inter-rater reliability was assessed using the Pearson product-moment correlation. The values were 0.98 for AN and 0.91 for BN, indicating a high degree of agreement. Consensus agreement was reached where there were disagreements.

The means and standard deviations for knowledge of anorexia nervosa and bulimia nervosa were, respectively, 1.47 and 1.07 (AN) and 2.23 and 0.77

(BN). The correlation between the two scores was 0.40. A paired samples t-test revealed that the difference between the two measures, 0.76, was significant, $t(67) = -6.07$, $p < 0.05$. Note that this result is not congruent with past research. Knowledge of anorexia nervosa has consistently been found to be greater than knowledge of bulimia nervosa (e.g., Huon et al., 1988; Morgan, 1999; Murray et al., 1990; Price et al., 1990; Smith et al., 1996), yet the reverse was true in the present study.

Do any Differences in Knowledge Exist for Participants in Regard to the Demographic Variables Considered with this Population?

Reported in Table 3 are the means and standard deviations for subgroups of participants defined by Academic Status (Masters, Ph.D.), ED Training (Yes, No), Location of Training (University, Outside), and ED Client Experience (Yes, No). The corresponding one-way ANOVAs with two levels are reported in Table 4. Unless otherwise stated, the Levene's test of homogeneity of variance indicated the subgroup variances differed only because of sampling variability ($p > .05$).

Academic status. AN Knowledge was higher among Ph.D. students than among Masters students, and this difference was significant, $F(1, 66) = 15.22$; $p < 05$. The relationship between academic status and BN knowledge did not meet the homogeneity of variance criterion.

Training. AN knowledge was significantly higher for participants with training in eating disorders than for those without, $F(1, 66) = 5.45$; $p < .05$. There

was, however, no significant difference between the two groups' BN knowledge, F (1, 66) = 2.50; nsd.

Table 3

Summary of Means and Standard Deviations for Knowledge Analyses

IV	DV	Groups	n	M	SD
Academic Status					
	AN Knowledge	Masters	46	1.15	0.94
		Ph.D.	22	2.14	1.04
	BN Knowledge	Masters	46	2.06	0.71
		Ph.D.	22	2.59	0.80
ED Training					
	AN Knowledge	Training	16	2.00	1.03
		No Training	52	1.31	1.04
	BN Knowledge	Training	16	2.50	0.97
		No Training	52	2.15	0.70
Location of ED Training					
	AN Knowledge	University	8	2.13	1.13
		Outside	60	1.38	1.04
	BN Knowledge	University	8	3.00	0.93
		Outside	60	2.13	0.70
ED Client Experience					
	AN Knowledge	ED Clients	29	1.79	1.15
		No ED Clients	39	1.23	0.96
	BN Knowledge	ED Clients	29	2.35	0.97
		No ED Clients	39	2.15	0.59

Note. Knowledge scores range from a minimum of zero to a maximum of four. AN = anorexia nervosa; BN = bulimia nervosa; ED = eating disorder.

Table 4

ANOVA Summary for Knowledge Analyses

IV	DV	Source	df	MS	F
Academic Status	AN	Between Groups	1	14.415	15.216*
		Within Groups	66	.947	
		Total	67		
	BN	Between Groups	1	4.113	7.514
		Within Groups	66	.547	
		Total	67		
ED Training	AN	Between Groups	1	5.864	5.445*
		Within Groups	66	1.077	
		Total	67		
	BN	Between Groups	1	1.466	2.496
		Within Groups	66	.587	
		Total	67		
Training Location	AN	Between Groups	1	3.883	3.508
		Within Groups	66	1.107	
		Total	67		
	BN	Between Groups	1	5.302	10.017*
		Within Groups	66	.529	
		Total	67		
Client Experience	AN	Between Groups	1	5.259	4.843*
		Within Groups	66	1.086	
		Total	67		
	BN	Between Groups	1	.607	1.010
		Within Groups	66	.600	
		Total	67		

Note. IV = independent variable; DV = dependent variable; Academic Status = Masters, Ph.D.; ED Training = eating disorder training: Yes, No; Training Location = ED Training: University, Outside; Client Experience = eating disorder client experience: Yes, No; AN = anorexia nervosa knowledge; BN = bulimia nervosa knowledge.

*$p < .05$.

Type of training. In contrast to training, there was no significant difference in AN knowledge between participants who had received university-based training and participants who received their training outside of university, but a significant difference in BN knowledge was found between these two groups, $F(1, 66) = 5.45$, $p < .05$. Participants who were trained in university possessed greater knowledge of BN than participants without such training.

Client experience. Lastly, AN knowledge was significantly greater for the group of participants with ED client experience than for the group without this client contact, $F(1, 66) = 4.84$; $p < .05$. However this experience did not influence BN knowledge.

Research Question Two: What are Educational Psychology Graduate Students' Attitudes Regarding Potential Causes of and Effective Treatments for Eating Disorders?

These items provided five response options for each of the disorders, ranging from 1 = "very likely cause" or "extremely effective" treatment to 5 = "very unlikely cause" or "not effective" treatment. Table 5 outlines the percentages of participants who reported causes to be either "likely" or "very likely" and treatments to be either "very effective" or "extremely effective" for each of the four disorders (AN, BN, AD, and SI). Respondents' choices of likely causes were consistent between the eating disorders, where "emotional problems", "the media", "self induced", and "influence of family" were the most commonly sponsored causes for both AN and BN. Also of note is that "family therapy" and

"psychotherapy/counseling" were considered effective treatment options by at least half of the participants for all four disorders.

Table 5

Percentages of Subjects (N=69) who Indicated a Cause to be "Likely" or "Very Likely" or a Treatment to be "Very Effective" or "Extremely Effective"

	Anorexia	Bulimia	Addictions	Suicide
Likely Causes				
Emotional problem	100.0	92.8	95.7	97.1
The media	76.8	72.5	31.9	13.0
Influence of family	58.0	53.6	63.8	44.9
Self-induced	55.9	54.4	51.5	41.8
Female pressure	47.1	47.1	14.7	4.4
Male pressure	45.6	47.1	23.5	7.4
Influence of friends	29.0	29.0	42.0	10.1
Physical problem	18.8	18.8	36.2	33.3
Effective Treatments				
Family therapy	63.8	63.8	50.7	54.4
Psychotherapy/counseling	54.4	55.9	54.4	82.4
Hospitalization	49.3	40.6	33.3	42.0
Education	29.4	32.4	36.8	27.9
Medication	18.8	18.8	13.0	49.3
Urge to take more self-control	17.4	17.4	20.3	20.3
Religious guidance	11.8	11.8	20.6	22.1
Exercise	2.9	4.3	20.3	19.1

Do any Differences in Opinion about Potential Causes of and Effective Treatments for Eating Disorders Exist Between Participants in Regards to the Demographic Variables Considered?

Several significantly distinct opinions towards potential causes were revealed based on membership in the subgroups defined by Academic Status (Masters, Ph.D.), Gender, and Counselling Experience (Yes, No). The subgroup

defined by Age (22-29, 30-39, and 40-59) expressed significant differences regarding effectiveness of the Exercise treatment option. The means and standard deviations for the cause and treatment (dependent) variables are summarized in Table 6, and the corresponding one-way ANOVAs with two levels are listed in Table 7. In each case, the Levene's test of homogeneity of variance indicated that the subgroups differed only because of sampling variability ($p > .05$).

Academic status. The Masters students marked "The media" as a likely cause of AN, BN, AD and SI significantly more than the Ph.D. students did, where the respective F-values were calculated as $F(1, 67) = 8.80$(AN), 9.78(BN), 5.97(AD), and 8.79(SI), $p < .05$. Similarly, the Masters students chose "Pressure from females" as a likely cause of anorexia nervosa, addictions, and suicidal ideation significantly more than Ph.D. students, where $F(1, 66) = 6.53$(AN), 4.15(AD), and 9.36(SI), $p < .05$, respectively. This difference in opinion was not found in regards to BN.

Gender. Males sponsored "influence of friends" as a likely cause for both AN and BN significantly more than females did, $F(1, 67) = 4.60$(AN), 4.71(BN), $p < .05$.

Counselling experience. Respondents with counseling experience noted "Physical problem" as an unlikely cause for AN significantly more than those participants without counselling experience, $F(1, 67) = 4.37$, $p < .05$. This experience did not have an effect on opinions regarding the likelihood of a physical cause for BN.

Table 6

Summary of Means and Standard Deviations for Possible Cause and Treatment Analyses

IV	DV	Groups	n	M	SD
Academic Status					
	Females & AN	Masters	46	2.35	0.97
		Ph.D.	22	2.95	0.79
	Females & BN	Masters	46	2.41	1.07
		Ph.D.	22	2.91	0.75
	Females & AD	Masters	46	3.33	0.94
		Ph.D.	22	3.82	0.91
	Females & SI	Masters	46	3.70	0.87
		Ph.D.	22	4.36	0.79
	Media & AN	Masters	46	1.66	0.76
		Ph.D.	22	2.27	0.88
	Media & BN	Masters	46	1.70	0.81
		Ph.D.	22	2.36	0.85
	Media & AD	Masters	46	2.74	1.01
		Ph.D.	22	3.41	1.14
	Media & SI	Masters	46	3.34	0.92
		Ph.D.	22	4.09	1.11
Gender					
	Friends & AN	Males	12	2.50	0.80
		Females	57	3.16	1.00
	Friends & BN	Males	12	2.50	0.80
		Females	57	3.14	0.95
Counselling Experience					
	Physical & AN	Experience	53	3.45	0.93
		No Experience	16	2.88	1.09
	Physical & BN	Experience	53	3.43	0.91
		No Experience	16	2.94	1.12
Age					
	Exercise & AN	22-29	37	4.43	0.87
		30-39	16	4.31	0.95
		40-59	16	3.69	1.14
	Exercise & BN	22-29	37	4.08	1.04
		30-39	16	4.06	0.93
		40-59	16	3.69	1.14

Note. Judgments were made on 5-point scales (1 = "very likely" cause or "extremely effective " treatment, 5 = "very unlikely" cause or "not effective" treatment). IV = independent variable; DV = dependent variable; Females = "Pressure from females" as a cause; Media = "The media" as a cause; Friends = "Influence of friends" as a cause; Physical = "Physical problem" as a cause; Exercise = "Exercise" as a treatment; AN = anorexia nervosa; BN = bulimia nervosa; AD = alcohol or drug addictions; SI = suicidal ideation.

Table 7

ANOVA Summary for Possible Cause and Treatment Analyses

IV	DV	Source	df	MS	F
Academic status					
	Females & AN	Between Groups	1	5.478	6.528*
		Within Groups	66	.839	
		Total	67		
	Females & BN	Between Groups	1	3.662	3.838
		Within Groups	66	.954	
		Total	67		
	Females & AD	Between Groups	1	3.604	4.145*
		Within Groups	66	.869	
		Total	67		
	Females & SI	Between Groups	1	6.641	9.359*
		Within Groups	66	.710	
		Total	67		
	Media & AN	Between Groups	1	5.634	8.795*
		Within Groups	67	.641	
		Total	68		
	Media & BN	Between Groups	1	6.558	9.781*
		Within Groups	67	.670	
		Total	68		
	Media & AD	Between Groups	1	6.615	5.969*
		Within Groups	67	1.108	
		Total	68		
	Media & SI	Between Groups	1	8.440	8.785*
		Within Groups	67	.961	
		Total	68		
Gender					
	Friend & AN	Between Groups	1	4.291	4.594*
		Within Groups	67	.934	
		Total	68		
	Friend & BN	Between Groups	1	4.065	4.706*
		Within Groups	67	.864	
		Total	68		
Counselling Experience					
	Physical & AN	Between Groups	1	4.103	4.372*
		Within Groups	67	.939	
		Total	68		
	Physical & BN	Between Groups	1	3.029	3.276
		Within Groups	67	.925	
		Total	68		
Age					
	Exercise & AN	Between Groups	2	3.167	3.486*
		Within Groups	66	.908	
		Total	68		
	Exercise & BN	Between Groups	2	.927	.860
		Within Groups	66	1.078	
		Total	68		

Note. Academic status = Masters, Ph.D.; Counselling Experience =Ye, No; Females = "Influence of females" cause; Media = "The media" cause; Friend = "Influence of friends" cause; Physical = "Physical problem" cause; Exercise = "Exercise" treatment; AN = anorexia nervosa; BN = bulimia nervosa; AD = alcohol or drug addictions; SI = suicidal ideation.

*$p < .05$.

Age. The oldest group designated "Exercise" as a more effective treatment for AN than those in the youngest group, and this difference was significant, $F(2, 66) = 3.49$, $p < .05$. A difference in opinion between age groups in regards to the effectiveness of exercise as a treatment for BN was not found.

Research Question Three: What are Educational Psychology Graduate Students' Attitudes Towards Eating Disordered Clients?

The attitudes component was assessed through the responses to seven survey items, which included population *prevalence estimates* for the eating disorders as well as attributions of *personal responsibility*, *'self-induced'* cause, '*self-control'* treatment, *recovery estimates*, and *liking* and *confidence* items for each of the four (AN, BN, AD, SI) disorders.

Population prevalence estimates. Estimates of the percentage of the population suffering with eating disorders were reported separately for AN and BN for both males and females. The mean prevalence estimates for anorexia nervosa among males and females were, respectively, 4.8 per cent (SD = 5.1, Range = 0.01 to 25.00) and 15.1 per cent (SD = 17.0, Range = 0.20 to 80.00). Mean prevalence estimates for bulimia nervosa were similar, at 4.0 per cent (SD = 5.3, Range = 0.04 to 35.00) for males and 15.3 per cent (SD = 15.7, Range = .40 to 80.00) for females.

Attributions of personal responsibility. Mean per cent personal responsibility attributed to the disorders ranged from 10 to 100 per cent, where anorexic clients were noted as the least personally responsible and addictions clients were judged as having the most personal responsibility. The means and

standard deviations for each of the disorders are listed in Table 8. During data analysis procedures it was suspected that this item might simply indicate the

Table 8
Means and Standard Deviations for Percentages Attributed to Personal Responsibility

Client Type	N	M %	SD
Anorexia	64	49.0	29.1
Bulimia	63	50.8	28.0
Addictions	63	57.7	26.2
Suicidal Ideation	62	51.9	29.6

idiosyncratic biases and value systems of individual respondents. For example, some participants may feel that all clients are 100 per cent responsible for their issues; thus, similar personal responsibility would be indicated for any client issue. This additional question, if there is a difference in the estimates of personal responsibility between the disorders, was analyzed by a univariate repeated measures ANOVA (see Table 9). The independent variables for this calculation were BN, AN, AD and SI, and the dependent measure was per cent personal responsibility attributed to each disorder.

Note that this procedure involves the assumption of compound symmetry, which requires the variance across the four repeated measures to be equal and the correlation between pairs of repeated measures to be equal. If this assumption is violated, there is an increase in the Type I error rate. Some statisticians believe that this assumption is too restrictive, therefore, only sphericity must be met. This is less restrictive but requires that the repeated

measures have equal variances (Glass & Hopkins, 1996). The assumption of sphericity was tested with Mauchly's test of sphericity, which revealed that it was violated across the four disorders, $\chi^2(5) = 168.5$, $p < .01$. However, the Greenhouse-Geisser correction factor was employed and F was found to be significant, $F(1.941, 118.382) = 6.47$, $p < .05$. That is, there was a significant difference across the four disorders (AN, BN, AD, and SI).

Pairwise comparisons were conducted using the Bonferroni method to test which groups were significantly different from one another, and significant differences were found between AN and BN, AN and AD, and BN and AD. Thus, clients with addictions were judged as significantly more personally responsible for their issues than eating disorder clients.

Table 9

Repeated Measures ANOVA Summary for Attributed Personal Responsibility Analyses

Source		df	MS	F	p
Within[2]					
	Disorder	1.941	1239.186	6.466	.002
	Error	118.382	191.649		

[2]Since there was only one sample, there are no between group effects. Variation among individuals across disorders is not reported since differences among individuals were as expected and therefore, of no interest.

Other measures of personal responsibility considered were "*Self-induced*" as a likely cause and "*Urge to take more self-control*" as an effective treatment, which were both reported in Table 5. Responses indicate that approximately one-half of this group of educational psychology graduate students felt that AN, BN, AD, and SI were self-induced but only about one-fifth felt that encouraging

self-control would be a useful method of treatment. Across the disorders the opinions regarding these items were similar, and these means and standard deviations are listed in Table 10.

Table 10

Means and Standard Deviations for Rating "Self-induced" as a Cause and "Self-control" as a Treatment

	"Self-induced"			"Self-control"		
Client Type	N	M	SD	N	M	SD
Anorexia	68	2.34	1.06	69	4.03	1.28
Bulimia	68	2.34	1.07	69	4.04	1.28
Addictions	68	2.43	2.43	69	3.59	1.23
Suicidal Ideation	67	2.66	1.14	69	3.80	1.26

Note. Ratings based on a five-point scale, where 1 = "very likely cause" or "extremely effective" and 5 = "very unlikely cause" or "not effective".

Estimates of recovery. Mean estimates of "percentage who will eventually make a good recovery" (N = 66) were lowest for anorexia nervosa and highest for suicidal ideation. The means and standard deviations for these estimates are listed in Table 11. To assess distinctions between the disorders, as with the attributions of personal responsibility analyses, these estimations were subject to a univariate repeated measures ANOVA (see Table 12). Here, the recovery estimates were the dependent variables and AN, BN, AD, and SI acted as the independent variables. The assumption of sphericity, as indicated by Mauchly's test of sphericity, was violated across the disorders, $\chi^2(5) = 57.21$, $p < .01$. Therefore the Greenhouse-Geisser correction factor was employed and F was found to be significant, $F(2.03, 131.81) = 29.36$, $p < .01$. Thus, there was a

significant difference in recovery estimates across the four disorders (AN, BN, AD, and SI).

Pairwise comparisons were conducted using the Bonferroni method to test which groups were significantly different from one another, and this significance was revealed between AN and BN, AN and SI, BN and SI, and AD and SI. That is, SI clients were judged to have a significantly higher rate of recovery than AN, BN, and AD clients, and, between the eating disorders, AN clients were estimated to have a significantly lower rate of recovery than BN clients.

Table 11

Means and Standard Deviations for Percentage Estimates of Recovery (N = 66)

Client Type	M %	SD	Range
Anorexia	43.8	20.8	10.0 - 85.0
Bulimia	51.1	18.8	10.0 - 85.0
Addictions	50.7	17.9	10.0 - 85.0
Suicidal Ideation	66.0	18.5	7.50 - 95.0

Table 12

Repeated Measures ANOVA Summary for Recovery Estimates Across the Disorders

Source		df	MS	F	p
Within[2]					
	Disorder	2.028	8495.214	29.360	.000
	Error	131.80	289.346		

[2]Since there was only one sample, there are no between group effects. Variation among individuals across disorders is not reported since differences among individuals were as expected and therefore, of no interest.

Liking and Confidence. The mean ratings of liking and confidence with the various client types were comparable, however, the patterns of response revealed some differences. Percentage reports of "like" or "really like", "don't like" or "dislike intensely", "somewhat" or "very confident", and "lack in" or "no

confidence"' for working with the four client types are summarized in Table 13. The middle categories ("do not mind either way" and "neither confident nor lacking confidence") are reported as a neutral category. These ratings reveal that AN clients were the least liked and most often marked as eliciting a lack of confidence.

Table 13

Percentages of Respondents Reporting Various Levels of Liking and Confidence in Working with Different Client Types (N = 62)

Diagnosis	Like	Neutral	Dislike	Confident	Neutral	Not Confident
Anorexia Nervosa	10.2 [a]	64.4	25.4	17.7	41.9	40.4
Bulimia Nervosa	15.0 [b]	70.0	15.0	19.3	45.2	35.5
Addictions	29.5 [c]	37.7	32.7	37.1	30.6	32.2
Suicidal Ideation	38.7	35.5	25.8	66.1	17.7	16.1

[a] N = 59. [b] N = 60. [c] N = 61.

Do any Differences in Attitudes Toward Eating Disorder Clients Exist for Participants in Regards to the Demographic Variables Under Consideration?

The means and standard deviations for subgroups of respondents expressing differences in attitudes toward different client types are listed in Table 14. These subgroups are defined by Academic Status (Masters, Ph.D.), Program Status (Counselling, Other), Eating Disorder Training (Yes, No), and Age (22-29, 30-39, 40-59), and the related one-way ANOVAs are reported in Table 15. In each case, the Levene's test of homogeneity of variance indicated that the subgroup variances differed only because of sampling variability ($p > .05$).

Academic status. Confidence working with bulimia nervosa and addictions clients was found to be significantly higher among Ph.D. students than it was among Masters students, with calculated F-values of $F(1, 60) = 4.70$, $p < .05$ and $F(1, 60) = 4.51$, $p < .05$ for BN and AD clients, respectively. This difference in confidence between Masters and Ph.D. students was not revealed for anorexic or suicidal clients.

Program status. Recovery estimates for anorexia nervosa were significantly lower among Counsellors than among participants from the Other areas of study, $F(1, 64) = 4.26$, $p < .05$. A difference in estimates of recovery between Counsellors and the Other respondents was not found for bulimia nervosa.

Eating disorder training. Participants who have received Eating Disorder Training expressed significantly greater tendency to feel confident to work with both AN and BN clients than did the group who had not received training, $F(1, 60) = 6.663$ (AN) and 8.325 (BN), $p < .05$. Similarly, ED trained participants reported liking AN clients significantly more than those without this training, $F(1, 57) = 4.002$, $p = .05$. ED training did not, however, affect respondents' liking towards BN clients.

Age. Per cent personal responsibility for bulimia nervosa was assessed as significantly greater by the oldest group (40-59) than by the middle group (30-39), $F(2, 60) = 3.638$, $p < .05$. This relationship was not found for anorexia nervosa.

Table 14

Summary of Means and Standard Deviations for Attitudes Towards Clients Analyses

IV	DV	Groups	n	M	SD
Academic Status					
	Confidence & AN	Masters	43	3.37	0.93
		Ph.D.	19	2.95	0.91
	Confidence & BN	Masters	43	3.30	0.83
		Ph.D.	19	2.79	0.92
	Confidence & AD	Masters	43	3.09	0.87
		Ph.D.	19	2.53	1.17
	Confidence & SI	Masters	43	2.44	0.93
		Ph.D.	19	2.05	1.13
Program Status					
	Recovery & AN	Counselling	44	40.18	20.44
		Other	22	51.11	19.98
	Recovery & BN	Counselling	46	47.95	18.44
		Other	22	57.30	18.26
ED Training					
	Liking & AN	Training	16	2.75	1.00
		No Training	43	3.23	0.75
	Liking & BN	Training	17	2.71	0.85
		No Training	43	3.05	0.69
	Confidence & AN	Training	17	2.76	0.97
		No Training	45	3.42	0.87
	Confidence & BN	Training	17	2.65	0.93
		No Training	45	3.33	0.80
Age					
	Responsible & AN	22-29	35	48.23	27.55
		30-39	13	37.38	30.01
		40-59	16	60.06	29.36
	Responsible & BN	22-29	35	49.80	26.53
		30-39	13	37.38	30.01
		40-59	15	64.67	24.82

Note. Confidence and Liking were based on 5-point scales (1 = "really like" or "very confident" and 5 = "dislike intensely "or "no confidence". Recovery and Responsibility ratings are based on percentage estimates. IV = independent variable; DV = dependent variable; ED = eating disorder; Confidence = confidence to work with clients; Recovery = recovery estimates; Liking = like working with clients; Responsible = estimates of personal responsibility; AN = anorexia nervosa; BN = bulimia nervosa; AD = alcohol or drug addictions; SI = suicidal ideation.

Table 15

ANOVA Summary for Attitudes Toward Clients Analyses

IV	DV	Source	df	MS	F
Academic Status					
	AN & Confidence				
		Between Groups	1	2.377	2.797
		Within Groups	60	.850	
		Total	61		
	BN & Confidence				
		Between Groups	1	3.466	4.702*
		Within Groups	60	.737	
		Total	61		
	AD & Confidence				
		Between Groups	1	4.232	4.505*
		Within Groups	60	.939	
		Total	61		
	SI & Confidence				
		Between Groups	1	1.996	2.011
		Within Groups	60	.993	
		Total	61		
Program Status					
	AN & Recovery				
		Between Groups	1	1752.735	4.256*
		Within Groups	64	411.805	
		Total	65		
	BN & Recovery				
		Between Groups	1	1279.705	3.789
		Within Groups	64	337.738	
		Total	65		
ED Training					
	AN & Liking				
		Between Groups	1	2.715	4.002*
		Within Groups	57	.678	
		Total	58		
	BN & Liking				
		Between Groups	1	1.414	2.608
		Within Groups	58	.542	
		Total	59		
	AN & Confidence				
		Between Groups	1	5.334	6.663*
		Within Groups	60	.801	
		Total	61		
	BN & Confidence				
		Between Groups	1	5.811	8.325*
		Within Groups	60	.698	
		Total	61		

Table 15 Continued

IV	DV	Source	df	MS	F
Age Group					
	AN & Responsibility				
		Between Groups	2	1866.399	2.298
		Within Groups	61	812.167	
		Total	63		
	BN & Responsibility				
		Between Groups	2	2629.439	3.638*
		Within Groups	60	722.800	
		Total	62		

Note. Academic Status = Masters, Ph.D.; Program Status = Counselling, Other; ED Training = eating disorder training, Yes, No; Age Group = 22-29, 30-39, 40-59; AN = anorexia nervosa; BN = bulimia nervosa; AD = alcohol or drug addictions; SI = suicidal ideation; Responsibility = per cent responsibility attributed to client; Confidence = level of reported confidence in working with client type; Recovery = estimate of recovery rate for the disorder; Liking = level of liking reported for client type.

*$p < .05$.

Research Question Four: What are Educational Psychology Graduate Students' Attitudes Towards Disordered Eating Behaviours?

Participants rated 32 eating-related behaviours on a 7-point scale, where 1 = normal and 7 = abnormal (in the sense of indicating a disorder). Table 16 outlines the percentages of participants who scored each item as either normal (1 or 2) or abnormal (6 or 7). Importantly, 11 of the 14 items specific to DSM-IV criteria were judged as abnormal (in the sense of indicating a disorder) by over 50 per cent of the respondents.

Do Differences in Attitudes Toward Disordered Eating Behaviours Exist Between Participants Who Represent Different Demographics?

The means and standard deviations for subgroups of participants who expressed significantly different opinions toward the eating-related behaviour items are

Table 16

Percentage of Participants Reporting Eating Related Behaviours & Attitudes as Definitely Normal or Definitely Abnormal

Behaviour	Normal	Abnormal
7. Inducing vomiting after eating to prevent weight gain. ▲	0.0	100.0
25. Chewing food and spitting it out to prevent weight gain. ▲	1.4	97.1
19. Taking a laxative to avoid weight gain. ▲	2.8	91.3
23. Binge-eating regularly. ▲	1.4	91.3
9. Being intensely fearful of gaining 2-3 lbs. ▲	0.0	85.5
24. Dieting to lose weight even when already thin. ▲	1.4	76.8
29. Deliberately not eating to upset someone else.	1.4	71.0
2. Avoiding eating, or going without food for prolonged periods.	0.0	70.0
32. Being upset about having even a small amount of fat on one's body. ▲	0.0	69.6
16. Deriving pleasure from deliberately going without food.	4.3	69.5
4. Feeling anxious about eating with other people.	1.4	69.5
15. Feeling out of control around food. ▲	1.4	66.7
13. Feeling as though one cannot stop eating. ▲	0.0	66.7
18. Frantic exercising to lose weight. ▲	0.0	65.2
1. Taking appetite suppressants.	1.4	59.4
8. Over-eating to the point of feeling sick. ▲	5.8	58.0
17. Thinking constantly about food.	2.9	56.5
21. Feeling guilty about eating.	2.9	50.7
5. Feeling fat, even when objectively not. ▲	15.9	49.2
20. Constantly counting calories.	0.0	43.5
26. Wanting to be extremely thin.	1.4	43.5
22. Being intensely fearful of gaining 6-7 lbs.	5.7	40.5

Table 16 Continued

Behaviour	Normal	Abnormal
6. Deliberately eating less than one would really like to when with other people.	8.7	31.8
30. Weighing oneself daily.	17.3	27.5
10. Occasional binge eating.	15.9	21.9
12. Being preoccupied with one's weight. ▲	14.5	18.8
3. A strong desire for a flat stomach.	30.3	8.6
28. Over-eating when feeling depressed.	13.0	7.2
11. Being concerned about the size of one's thighs	30.4	7.2
27. Being dissatisfied with the size or shape of one's body. ▲	36.2	7.2
31. Weighing oneself weekly.	47.8	7.2
14. Avoiding specific foods because they are thought to be fattening.	50.7	7.2

Note. N = 69. Items marked ▲ = consistent with DSM-IV diagnostic criteria for one of the eating disorders.

found in Table 17, and the associated one-way ANOVAs are summarized in Table 18. The subgroups of participants were defined by Academic Status (Masters, Ph.D.), Gender, and Eating Disorder Client Experience (Yes, No). In each case, the Levene's test of homogeneity of variance indicated that the subgroup variances differed only because of sampling variability ($p > .05$).

Academic status. Ph.D. students rated "Constantly counting calories" and "Feeling guilty about eating" as significantly more abnormal than the Masters students did, $F(1, 67) = 8.935$ and 4.616, $p < .05$, respectively.

Gender. Female respondents rated "Frantic exercising to lose weight" as more abnormal than the male respondents, and this difference was significant, $F(1, 67) = 4.803$, $p < .05$.

Eating disorder client experience. Respondents with eating disorder client experience rated several items as significantly more normal than did the participants without this experience. The behaviours construed as significantly more normal by those who have worked with eating disorder clientele were: "Feeling guilty about eating", $F(1, 67) = 6.464$, $p < .05$; "Being intensely fearful of gaining 2-3 lbs", $F(1, 67) = 4.682$, $p < .05$; "Thinking constantly about food" $F(1, 67) = 4.273$, $p < .05$; and "Being preoccupied with one's weight", $F(1, 67) = 4.480$, $p < .05$.

Table 17

Summary of Means and Standard Deviations for Attitudes Towards Eating-Related Behaviours Analyses

IV	DV	Groups	n	M	SD
Academic Status					
	Counting Calories	Masters	47	4.98	1.05
		Ph.D.	22	5.77	0.97
	Guilty	Masters	47	5.00	1.43
		Ph.D.	22	5.77	1.31
Gender					
	Frantic Exercise	Female	57	5.88	0.98
		Male	12	5.17	1.19
ED Client Experience					
	Guilty	Yes	30	4.76	1.52
		No	39	5.62	1.25
	Fear 2-3 lbs	Yes	30	6.00	1.11
		No	39	6.46	0.64
	Thinking of Food	Yes	30	5.10	1.45
		No	39	5.74	1.14
	Weight Preoccupation	Yes	30	3.77	1.45
		No	39	4.54	1.54

Note. Ratings were based on a 7-point scale (1 = "normal", 5 = "abnormal, in the sense of indicationg a disorder"). IV = independent variable; DV = dependent variable; ED = eating disorder; Counting Calories = "Constantly counting calories"'; Guilty = "Feeling guilty about eating"; Frantic Exercise = "Frantic exercising to lose weight"; Fear 2-3 lbs = "Being intensely fearful of gaining 2-3 lbs"; Thinking of Food = "Thinking constantly about food"; Weight Preoccupation = "Being preoccupied with one's weight".

Table 18

ANOVA Summary for Attitudes Toward Eating-Related Behaviours Analyses

IV	DV	Source	df	MS	F
Academic Status					
	Guilty				
		Between Groups	1	8.948	4.616*
		Within Groups	67	1.938	
		Total	68		
	Counting Calories				
		Between Groups	1	9.447	8.935*
		Within Groups	67	1.057	
		Total	68		
Gender					
	Frantic Exercise				
		Between Groups	1	5.005	4.803*
		Within Groups	67	1.042	
		Total	68		
ED Client Experience					
	Guilty				
		Between Groups	1	12.214	6.464*
		Within Groups	67	1.890	
		Total	68		
	Fear 2-3 lbs				
		Between Groups	1	3.612	4.682*
		Within Groups	67	.772	
		Total	68		
	Thinking of Food				
		Between Groups	1	7.024	4.273*
		Within Groups	67	1.644	
		Total	68		
	Weight Preoccupation				
		Between Groups	1	10.100	4.480*
		Within Groups	67	2.255	
		Total	68		

Note. IV = independent variable; DV = dependent variable; ED = eating disorder; Counting Calories = "Constantly counting calories"'; Guilty = "Feeling guilty about eating"; Frantic Exercise = "Frantic exercising to lose weight"; Fear 2-3 lbs = "Being intensely fearful of gaining 2-3 lbs"; Thinking of Food = "Thinking constantly about food"; Weight Preoccupation = "Being preoccupied with one's weight".

*$p < .05$.

Chapter V: Discussion

That eating disorders are a health-care concern in North America is indisputable, and the training of helping professionals should adapt to the demands that this client group represents. The purpose of the current descriptive study was to explore educational psychology graduate students' knowledge of and attitudes toward two of the more pervasive eating disorders, anorexia nervosa and bulimia nervosa. This information was sought in hopes of increasing our understanding of the training needs of developing psychologists. Furthermore, it was anticipated that the knowledge and attitudinal status of these students might be utilized to assist educators in program development in the area of eating disorder education.

The data was obtained through the use of survey methodology, where graduate students from the Department of Educational Psychology at a large Canadian university voluntarily completed a three-part questionnaire soliciting demographic, knowledge, and attitudinal information. The responses were compiled and analyzed descriptively, through the use of means and standard deviations, to give an overall impression of how this group performed. Further, in order to reveal whether any significant knowledge or attitudinal differences existed between the various subgroups represented, univariate analyses of variance (ANOVAs) were also calculated.

This section will discuss the implications of the main findings of this research, followed by an exploration of the implications for educational

psychology and counsellor training, limitations of the current study, suggestions for future research, and concluding remarks.

Eating Disorder Knowledge

Knowledge results revealed that this sample of students from educational psychology could better define bulimia nervosa (BN) than anorexia nervosa (AN) and that their overall ability to define each of the disorders was relatively low. This higher level of BN knowledge is not congruent with past research, which has consistently revealed greater levels of AN knowledge across a variety of respondent groups (e.g., Huon et al., 1988; Morgan, 1999; Murray et al., 1990; Price et al., 1990; Smith et al., 1986). Of these studies, the respondent population most similar to the current participants was a group of school counsellors, surveyed by Price et al. (1990). They displayed greater knowledge for AN than BN, and also a fairly high level of overall knowledge. The Price et al. (1990) true/false questionnaire approach, however, only required identification of eating disorder symptomology, whereas the present study required defining these disorders without cues. This more challenging format is considered a more accurate indicator of true knowledge levels, which, for this group, were modest. Note that the elevated levels of BN knowledge may be due to the scoring rules applied in this research. The commonly associated "binge" and "purge" behaviours are identified as independent diagnostic criteria in the DSM-IV definition, and thus, they were each given a point value. Because they are strongly associated with one another, this may have falsely raised the BN knowledge scores.

The current finding, better knowledge of bulimia nervosa, may also be due to the increased attention this disorder has received through the media, notwithstanding that several major celebrities (e.g., Jane Fonda and Princess Diana of Wales) have 'come out' and shared their stories of personal struggles with bulimia. Further, eating disorder groups and educators have been prolific in their drives to educate the public, using such means as public screenings, eating disorder conferences, internet websites, and opening clinics for treatment. Moreover, greater knowledge of BN may reflect the likelihood that psychologists will work with these clients. That is, these student psychologists may have greater awareness of BN and BN issues due to experience, expectations, or educational emphasis. Treatment of AN, on the other hand, necessarily stresses medical and psychiatric interventions, so this respondent sample may have had limited exposure to it. None of these suggestions explains, however, why the overall knowledge levels are so low in a population that would be expected to have superior diagnostic skills.

With this in mind, exploration into improving basic eating disorder education within the current Department of Graduate Studies in Educational Psychology is warranted. This point is additionally emphasized in the revealed subgroup differences, where AN knowledge was significantly greater among respondents with more educational experience (Ph.D. students, those with eating disorder training, and those with eating disorder client experience). Furthermore, university-trained participants had greater BN knowledge than did those who had

received training elsewhere, i.e., university training opportunities can increase eating disorder knowledge.

Attitudes Regarding Potential Causes and Effective Treatments

The opinions expressed by the educational psychology students regarding potential causes of and effective treatments for eating disorders, with an emphasis on emotional problems and family or psychotherapy, were congruent with past research (Butler et al., 1990; Fleming & Szmuckler, 1992; Smith et al., 1986). Interestingly, the four items most frequently designated as a cause of eating disorders in this population (i.e., "Emotional problem", "Influence of family", "The media" and "Self-induced") were the same as Fleming and Szmuckler's (1992) findings with medical professionals. However, the current group showed a much greater propensity to view the eating disorders as due to outside influence.

The main subgroup differences also highlight this emphasis on external influences as causing eating disorders. This research revealed that males noted "Influence of friends" as a causal factor significantly more than female respondents, and that Masters students noted "Influence of females" and "The media" significantly more than the Ph.D. participants. This suggests that training psychologists are aware that they could play an important role in the treatment of AN and BN (as indicated by sponsoring family and psychotherapy as effective treatments), but it also highlights a marked sensitivity toward external influences, especially to media, as causing these disorders. This may be due to real changes in the promulgation of media, or it may reveal a level of ignorance as to the complexity of these disorders.

Attitudes Towards Eating Disorder Clients

Attitudes towards eating disorder clients were assessed using several measures. The first of these, *prevalence estimates* for AN and BN, can also be considered an aspect of eating disorder knowledge. The prevalence estimates made by this group of educational psychology students reveal that they believe that the incidence of eating disorders is greater among females than among males, that males account for equal percentages of diagnoses for both AN and BN, and that incidence of AN and BN is similar. Estimates that prevalence is greater among females than males are congruent with epidemiological data, however, the remaining biases do not hold true. For example, actual female to male ratios are different for each disorder, where male cases in fact account for a greater percentage of BN diagnoses than they do AN diagnoses (e.g., Braun, Sunday, Huang, & Halmi, 1999). Thus, the current estimates not only reveal an assumption of similarity between the disorders (i.e., no difference in gender ratios) but also an overestimation of male cases (where males were noted to account for approximately 30 per cent of the eating disorders and actual representation is approximately 10 per cent).

Further, BN rates are noted to be much higher than AN rates (e.g., Nobakht & Dezhkam, 2000), yet the participants in this study marked them as the same. The importance of these estimates is twofold. First, although they are definitely within the general vicinity of rates discussed in the literature, these educational psychology students reveal no ability to distinguish between the disorders, suggesting limited knowledge. Second, in regards to the primary

reason for utilizing this measure (to assess participants' sensitivity to and perceptions of commonality of the eating disorders), the lack of distinction between AN and BN indicates that it would not be prudent to assume that the major over-estimation of AN prevalence indicates greater sensitivity towards this disorder.

The second attitudinal measure, estimates of *personal responsibility*, was utilized to assess tolerance or willingness to treat each of these client types. This inference is derived from the work of Crisp et al. (2000), which delineated the argument that tolerance for a client's issues is indicated by the extent to which the caregiver blames the client for their disorder such that increased estimates of personal responsibility infer negative feelings and less willingness to treat. Post-analysis discussions, however, illuminated that this item is problematic because it could also be interpreted as indicating *positive* feelings toward the client and *more* willingness to treat. In this case, the respondent would view personal responsibility as a measure of the client's ability to take responsibility for his or her own issues, and thus higher levels of personal responsibility would indicate a belief that the client will be easier to work with. Consequently, because of the conflicting nature of these two interpretations, deriving meaning from this item is not feasible.

A third attitudinal measure, *recovery estimates,* revealed that respondents felt that AN clients have the lowest rate of recovery among these disorders, which reveals some awareness that AN has the highest mortality rate of all the psychiatric illnesses (e.g., Herzog, Greenwood, Dorer, Flores, Ekeblad, Richards,

Blais, & Keller, 2000; Herzog, Nussbaum & Marmor, 1996; Hsu, 1991; Neumarker, 2000). Other suggested hypotheses are that low estimates of recovery indicate a reluctance to treat these individuals (Burket & Schramm, 1995) and that high estimates of recovery would indicate a trivial attitude towards the eating disorders (Crisp et al., 2000). The current data reflect the opinion that approximately one-half of eating disorder clients will not recover, which may indicate some reluctance to treat. It also suggests that respondents may have some knowledge that these disorders are generally fairly resistant to treatment.

A further finding was that recovery estimates for AN were significantly lower amongst the Counsellors than amongst the participants in the Other specialty areas. This disparity between estimated rates of recovery could reflect several attitudinal differences. For instance, counsellors may hold more negative attitudes toward AN clients, where underestimating the recovery rates could be a reflection of a sense of hopelessness or helplessness in working with these individuals. The opposite of this, however, where the other students would hold a more optimistic view, is not indicated, as the non-counselling students still estimated that almost half of the AN clients would not make a good recovery. Another potential explanation is that these low estimates of recovery indicate superior knowledge and awareness, which suggests that the counsellors have been privy to the information outlining low AN recovery rates. The current findings make sense both as an indicant of this group's level of eating disorder knowledge (i.e., the aforementioned treatment resistance and mortality issues) and also as an indicant of awareness of one's role in the treatment of AN, where

some reluctance to treat among counsellors-in-training would be expected considering the many medical complications an anorexic faces.

The *liking* and *confidence* items were important indicators for this research as they asked for direct expression of the respondents' attitudes toward eating disorder clients. Both AN and BN were least often liked and least often noted as disorders with which the respondents would be confident to work with, and they were also most often noted as disorders with which the respondents were not confident. The highest level of confidence was expressed for working with suicidal ideation (by almost 2/3 of the respondents), which may be partly due to the fact that this is also the area in which the highest percentage of respondents had received some training (66.7 per cent). Lack of confidence in working with eating disorder clients supports past findings (e.g., Blum & Bearinger, 1990; Ghadirian & Leichner, 1990; Morgan, 1999; Price et al., 1990) and is likely linked to both a need for training (only 24.6 per cent of respondents had some) and some knowledge that these disorders are resistant to treatment. The current outcomes also highlight that Ph.D. students were more confident with BN and AD clients than Masters students, and further, that those who had received eating disorder training expressed significantly greater tendency to like AN clients and to feel more confident to work with both AN and BN.

The finding that increased confidence is associated with higher levels of education is not surprising, if anything, it is surprising that this association was not found for all client types. These results are compatible with expectations that increased training would increase comfort level and thereby increase liking and

confidence in working with these clients. This is particularly relevant for the respondent population because students have been reported to experience a release of anxiety and an increase in confidence as they receive more training. For example, Sawatzky et al. (1994) found that an essential component of a counsellor's development is the sense of empowerment resulting from perceived increased competence.

Attitudes Towards Disordered Eating Behaviours

The current findings reveal that the surveyed educational psychology graduate students are able to identify and distinguish most of the eating related behaviours and attitudes consistent with an eating disorder diagnosis. However, the modest mean knowledge scores for anorexia nervosa and bulimia nervosa demonstrate that many of these students are *not* able to aptly describe these disorders.

Interestingly, participants who had eating disorder client experience rated "Feeling guilty about eating", "Being intensely fearful of gaining 2-3 lbs", "Thinking constantly about food" and "Being preoccupied with one's weight" as significantly more normal than did those without the same client contact. Working with eating disorder clients has been associated with marked changes in one's own experience of food and image-related issues (Shisslak et al., 1989), thus it is not surprising to find looser definitions of normalcy among the experienced group. This also points to the necessity of supportive supervision for student psychologists and any professionals training to work with eating disordered clientele (e.g., see Delucia-Waack, 1999).

Implications for Educational Psychology and Counsellor Training

The importance of improving and/or including eating disorder education at the graduate training level is, first and foremost, emphasized by the knowledge findings. The modest overall level of eating disorder knowledge expressed by this group of psychologists-in-training indicates that they would benefit from some instruction. Further, the subgroup comparison results revealed greater knowledge about anorexia nervosa amongst participants with greater amounts of training or experience. While this is expected, it is important to note the existence of this relationship as it justifies the expenditure of resources on program development.

Another finding of interest is that BN knowledge was greater for participants who had received university-based eating disorder training versus those who had received outside eating disorder training. This may simply be a reflection of the fact that this is a student population who would likely find university-based training more conducive to their learning (and motivation to learn), but it may also indicate that university-based training is a superior method of transmitting this information. Past research has indicated that health professionals both require and desire increased training in the eating disorders. For example, Blum & Bearinger (1990) found that nearly 2/3 of 460 surveyed psychologists reported insufficient training in managing eating disorders. Further, Ghadirian & Leichner (1990) surveyed every Canadian psychiatric training centre and found that only 22.2 per cent of the respondents felt that university teaching on eating disorders was adequate. The current knowledge

results emphasize the benefits not only of increased eating disorder education but also of teaching this in the university setting.

There are several areas in which this sample revealed some inaccurate biases, and hence, they are important areas of consideration for the training of psychologists in the current university program. For example, the respondents' emphasis on outside influences as causing these disorders may indicate a need for a training program to emphasize the fact that many factors are involved in the manifestation of an eating disorder. That media, culture, and emphasis on diet and body image are influential is a certainty, but to minimize the affects of the multiple predisposing factors would be negligent. Thus, training should be of some benefit as it could promote deeper understanding and acceptance of these clients' complex issues.

A second (expected) phenomenon was manifest in the differences between the Masters and Ph.D. students, where the Masters students' expressed lower overall eating disorder knowledge scores, greater emphasis on external causes, and lower levels of confidence with bulimic clients. Although greater levels of knowledge and confidence may arguably be due to the likelihood that Ph.D. students have more academic and/or client experience, because these variables (e.g., year of program and eating disorder client experience) were independently tested for and either found insignificant or significant elsewhere, it follows that other factors may be involved. Accordingly, implementing training at the Masters level would be advisable, particularly because many students will graduate and pursue professional licensing without a

doctoral degree. Moreover, the generally observed higher levels of confidence, liking and knowledge in participants with more training and experience is a strong argument for including eating disorder education in graduate-level educational psychology programs.

A further finding of interest were the low estimates of recovery from anorexia nervosa. These estimates reveal that this group of graduate students is aware of the treatment resistance associated with this disorder, but it also suggests a need for some training focusing on the opportunities for successful treatment. Although research indicates that the eating disorders are often chronic and unremitting conditions, instilling some hope in training psychologists could only benefit the eating disorder community.

Additionally, the finding that respondents with eating disorder client experience rated several disordered eating behaviours as more normal than the inexperienced group, highlights a need for specialized supervision. Because these issues are so deeply intertwined with sociocultural factors, it makes sense that many of the dilemmas an eating disorder client wrestles with will also hold true for the helping professional. Knowledge alone may not arm one against the affects of a client's distorted views, and, although supervision is a known necessity regardless of client type, supervisors with eating disorder knowledge will be more sensitive to the possibility of eating-related issues among the trainees (Shisslak et al., 1989).

Above and beyond these revealed response patterns, it is also critical to assess the implications of what was *not* found. It was expected that the

subgroup comparisons between Counsellors and Other would reveal greater differences between them. The only interesting difference indicated in this study was that the recovery estimates for anorexia nervosa clients were lower among Counsellors than among the LDA and Special Education students. As previously mentioned, this does reveal some knowledge of the therapeutic challenges that these clients represent, as well as some indication that the Counsellors may be resistant to treating this client group. More critical to this discussion, however, is that the Counsellors did not demonstrate higher levels of knowledge, liking or confidence than the Others. Because the Counselling students are the group most likely to be working directly with clients they are also the group that should be in possession of greater knowledge, liking and confidence for working with eating disorders.

Limitations of the Current Study

The limitations of the current research are found in the instrument and the sampling methodology.

The Instrument

This questionnaire (Fleming & Szmuckler, 1992) was chosen for adaptation because it was construed to have great value for exploratory research, i.e., the many items provide opportunity to tap into multiple aspects of the participants' knowledge and attitudes. However, this advantage also introduces the main limitation of the instrument choice, which is the lack of opportunity for reliability analyses. The survey is composed of multiple independent items, which allows for great breadth of information but does not

allow for the creation of scales of related items (which are necessary for reliability analyses). Conversely, a second limitation is found in a lack of questions, as this research could have benefited from asking the respondents their opinions as to the current status of eating disorder education in educational psychology (e.g., see Blum & Bearinger, 1990; Ghadirian & Leichner, 1990).

Sampling Methodology

This sample of educational psychology students is highly selective and therefore only representative of similar populations. Further, the response rate of 58.5 per cent indicates that some sampling error or bias may have influenced the current findings. For example, it is possible that those who agreed to participate may not be representative, i.e., counsellors with extremely poor knowledge of or attitudes towards eating disorders may have been less likely to respond. Finally, a comparison group was not utilized in this research, which further isolates the current findings.

Suggestions for Future Research

The present study has begun to demonstrate the level of eating disorder knowledge and attitudes among students in an educational psychology graduate program. Future research is warranted to not only redress the main limitations of the current study but also to explore the implementation of an eating disorder education program.

Improvements on the Current Research

Addressing the limitations of this study would involve improved instrumentation and improved sampling methodology. These requirements

could be met through the administration of a more focused assessment instrument to similar programs across Canada. This would result in an opportunity for a larger sample size and utilization of the superior method of stratified random sampling. The instrument should be developed to provide a score for the respondents' knowledge or attitudes in order to determine which areas need improvement. Participants could also be asked directly about their opinions regarding eating disorder education. These questions may include, for example, whether or not they find their current training in eating disorders adequate, what type of training would be the most effective, and whether they are willing or intend to treat clients with eating disorder issues. Finally, a comparison group (such as undergraduate students) could also be surveyed.

Program Implementation

The current Department of Educational Psychology could implement a trial program using a repeated measures design. One suggestion is to survey Masters students in their first year (utilizing the same survey design parameters outlined above), include an eating disorder seminar in a core course, and then survey the knowledge and attitude status of these same students at the end of their program. As previously discussed, eating disorder information should be disseminated during the Masters year because many of these students will not pursue doctoral studies. Furthermore, Burket and Schramm (1995) noted that therapists' attitudes towards eating disorder clients were likely formed during their early years of study. Note that training in psychology commonly includes direct experience with clients, and the current findings concur with the expected

relationship between client experience and increased knowledge but they also highlight the need for using supervisors who are sensitive to eating disorder issues. Because most major cities have eating disorder clinics, and most universities have eating disorder clients, both clientele and professional supervision should be accessible.

Conclusion

As morbidity and mortality increasingly reflect social conditions (e.g., Hsu, 1996), so too it becomes clear that deficits in eating disorder knowledge amongst helping professionals are not acceptable. Anorexia nervosa has been reported as having the highest mortality rate of all the psychiatric illnesses (e.g., Neumarker, 2000), and the secretive, comorbid nature of eating disorders means that a large number of cases are not diagnosed. The ability to diagnose anorexia nervosa and bulimia nervosa is therefore essential for practicing psychology professionals, as is the recognition that these disorders are eminently treatable. This study showed that, in the participating Department of Educational Psychology graduate studies, learning experience and theoretical knowledge on eating disorders could benefit from improvement.

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Appendix A

Educational Psychology Graduate Student Awareness of Eating Disorders Information Form

Please read the following section carefully, and keep this page for your information.

General Information:

Eating disorders are being reported at rates ranging from 0.5% to 18% in various populations of our communities. Most researchers in this field agree that the secretive nature of these disorders, particularly bulimia nervosa and eating disorders not otherwise specified, means that a large number of cases remain unreported and/or undiagnosed. This issue of diagnosis is an important one for professionals to be aware of because there are high rates of psychiatric comorbidity and, especially amongst the anorexia nervosa population, high rates of mortality. That is, without proper diagnosis, these people are at risk of dying.

You are invited to participate in the following study, which examines psychology student knowledge and attitudes to eating disorders. This study is being conducted for a Master's thesis project for Suzy Worthington-White, under the supervision of Dr. Barbara Paulson, in the University of Alberta's department of Educational Psychology. Your participation will help us to further our understanding of knowledge, attitudes, and experience with eating disorders among graduate psychology students. In addition to being analyzed for a Master's thesis, the results of this study may be presented at conferences or published in professional journals. Responses, however, will be reported in group-form only. All data will be securely stored for seven years and thereupon destroyed.

Participation:

Your participation in this research is *voluntary*. You have the choice to not return this questionnaire with no risk to your academic status or access to services at the university. Your responses on this questionnaire are *strictly confidential*, and will only be accessible to the primary researchers of this study (i.e., Suzy Worthington-White and Dr. Barbara Paulson). Finally, your anonymity will be ensured, as your name will not appear on the questionnaire. By returning this questionnaire, you indicate your willingness to participate in this study.

For the results of this survey to be meaningful, it is important that you try to answer all of the questions as accurately and honestly as possible. This questionnaire should take 20-30 minutes to fill out. We ask that you try to complete this questionnaire in a quiet place, and that you answer all items. However, if you do not want to answer a specific item, you do not have to. We are not aware of any risks or harm that may result from participation in this study.

Please feel free to ask any questions you may have by contacting either of the researchers below. If you are interested in obtaining the results of this study a research report will be made available, by request, in September 2001. If you would like any further information about the study, please contact Dr. Barbara Paulson at (780) 492-5298, or email her at barb.paulson@ualberta.ca. Please keep this sheet for your information.

Suzy Worthington-White
(Master's Student)
sueblanc@look.ca

Dr. Barbara Paulson
(Supervisor)
barb.paulson@ualberta.ca

Appendix B

Demographic Information

Please provide the following information by either CIRCLING or FILLING IN the appropriate response:

Age: _____

Gender: ___ Female ____Male

Relationship Status: Single Married Divorced/Separated Widowed

Program: Counselling Special Education LDA Other (please specify) _____

Current program status (by year): Masters: 1st 2nd Other _____

Doctoral: 1st 2nd 3rd 4th Other _____

Have you ever worked as a counsellor? YES NO
(include practicum or volunteer work)

If YES, for how long? ___ years ___months

Have you worked with clients who suffer from:			If YES, how many?
an eating disorder?	YES	NO	_____
alcohol or drug addiction?	YES	NO	_____
suicidal ideation?	YES	NO	_____

Have you ever had *personal contact* with a person with:			
an eating disorder?	YES	NO	_____
alcohol or drug addiction?	YES	NO	_____
suicidal ideation?	YES	NO	_____

Have you ever received training specific to clients with:			If YES, what type?
an eating disorder?	YES	NO	_____
alcohol or drug addiction?	YES	NO	_____
suicidal ideation?	YES	NO	_____

Appendix C

The Royal Melbourne Hospital Eating Disorder Survey

a) Briefly, what do you regard as the major features of anorexia nervosa?

b) What percentage of the population do you estimate suffers from anorexia nervosa?

Males: _____% Females _____%

c) Briefly, what do you regard as the major features of bulimia nervosa?

d) What percentage of the population do you estimate suffers from bulimia nervosa?

Males: _____% Females: _____%

e) Please complete the following table by indicating your opinion as to the likeliness of *each* possible cause for *each* syndrome.

Possible Causes of Syndrome
1 = *very likely cause*
2 = *likely cause*
3 = *possible cause*
4 = *unlikely cause*
5 = *very unlikely cause*

Example:

***** Please Score Each Category *****

Possible Causes	Anorexia Nervosa	Bulimia Nervosa	Alcohol or Drug Addiction	Suicidal Ideation
Poor body image	1	1	5	3

***** Please Score Each Category *****

Possible Causes	Anorexia Nervosa	Bulimia Nervosa	Alcohol or Drug Addiction	Suicidal Ideation
1. Emotional Problem				
2. Influence of Friends				
3. Influence of Family				
4. Pressure from Females				
5. Pressure from Males				
6. The Media				
7. Self-Induced				
8. Physical Problem				
9. Overall, to what extent are these clients responsible for their condition? (percentage) e.g., 25%				

f) Please complete the following table by indicating your opinion as to the effectiveness of *each* treatment for *each* syndrome.

Treatment Effectiveness
1 = *extremely effective*
2 = *very effective*
3 = *somewhat effective*
4 = *slightly effective*
5 = *not effective*

Example:

***** Please Score Each Category *****

Treatment Type	Anorexia Nervosa	Bulimia Nervosa	Alcohol or Drug Addiction	Suicidal Ideation
12-Step Program	4	3	1	5

***** Please Score Each Category *****

Treatment Type	Anorexia Nervosa	Bulimia Nervosa	Alcohol or Drug Addiction	Suicidal Ideation
1. Psychotherapy/ Counselling				
2. Family Therapy				
3. Exercise				
4. Medication				
5. Religious Guidance				
6. Hospitalization				
7. Education				
8. Urge client to take more self-control				
9. What percentage of these clients do you estimate will eventually make a good recovery?				

g) To what extent do you *like* working with these clients?

1 = *really like*
2 = *like*
3 = *do not mind either way*
4 = *don't like*
5 = *dislike intensely*

***** Please Score Each Category *****

Anorexia Nervosa	
Bulimia Nervosa	
Alcohol or Drug Addicted	
Suicidal Ideation	

h) To what extent do you *feel confident* in your ability to work with these clients?

1 = *I feel very confident*
2 = *I feel somewhat confident*
3 = *neither confident nor lacking confidence*
3 = *I feel a lack in confidence*
4 = *I have no confidence*

***** Please Score Each Category *****

Anorexia Nervosa	
Bulimia Nervosa	
Alcohol or Drug Addicted	
Suicidal Ideation	

Appendix D

Listed on the following two pages are some eating related behaviours and attitudes. Please CIRCLE the number that BEST indicates the extent to which you feel the behaviour or attitude listed is NORMAL or ABNORMAL (in the sense of indicating a disorder).

NOTE: Circling a 1 indicates that you feel the behaviour is definitely normal, and circling a 7 indicates that you feel the behaviour is definitely abnormal.

EXAMPLE

Eating three meals/day	(Normal)	1	2	3	4	5	6	7	(Abnormal)
Screaming at the sight of butter	(Normal)	1	2	3	4	5	6	7	(Abnormal)

1. Taking appetite suppressants	(Normal)	1	2	3	4	5	6	7	(Abnormal)
2. Avoiding eating, or going without food for prolonged periods	(Normal)	1	2	3	4	5	6	7	(Abnormal)
3. A strong desire for a flat stomach	(Normal)	1	2	3	4	5	6	7	(Abnormal)
4. Feeling anxious about eating with other people	(Normal)	1	2	3	4	5	6	7	(Abnormal)
5. Feeling fat, even when objectively not	(Normal)	1	2	3	4	5	6	7	(Abnormal)
6. Deliberately eating less than one would really like to, when with other people	(Normal)	1	2	3	4	5	6	7	(Abnormal)
7. Inducing vomiting after eating to prevent weight gain	(Normal)	1	2	3	4	5	6	7	(Abnormal)
8. Over-eating to the point of feeling sick	(Normal)	1	2	3	4	5	6	7	(Abnormal)
9. Being intensely fearful of gaining 2-3 lbs	(Normal)	1	2	3	4	5	6	7	(Abnormal)
10. Occasional binge eating	(Normal)	1	2	3	4	5	6	7	(Abnormal)
11. Being concerned about the size of one's thighs	(Normal)	1	2	3	4	5	6	7	(Abnormal)
12. Being preoccupied with one's weight	(Normal)	1	2	3	4	5	6	7	(Abnormal)
13.Feeling as though one cannot stop eating	(Normal)	1	2	3	4	5	6	7	(Abnormal)
14. Avoiding specific foods because they are thought to be fattening	(Normal)	1	2	3	4	5	6	7	(Abnormal)

REMINDER: Circling a 1 indicates that you feel the behaviour is definitely normal, and circling a 7 indicates that you feel the behaviour is definitely abnormal.

15. Feeling out of control around food	(Normal)	1	2	3	4	5	6	7	(Abnormal)
16. Deriving pleasure from deliberately going without food	(Normal)	1	2	3	4	5	6	7	(Abnormal)
17. Thinking constantly about food	(Normal)	1	2	3	4	5	6	7	(Abnormal)
18. Frantic exercising to lose weight	(Normal)	1	2	3	4	5	6	7	(Abnormal)
19. Taking a laxative to avoid weight gain	(Normal)	1	2	3	4	5	6	7	(Abnormal)
20. Constantly counting calories	(Normal)	1	2	3	4	5	6	7	(Abnormal)
21. Feeling guilty about eating	(Normal)	1	2	3	4	5	6	7	(Abnormal)
22. Being intensely fearful of gaining 6-7 lbs	(Normal)	1	2	3	4	5	6	7	(Abnormal)
23. Binge-eating regularly	(Normal)	1	2	3	4	5	6	7	(Abnormal)
24. Dieting to lose weight even when already thin	(Normal)	1	2	3	4	5	6	7	(Abnormal)
25. Chewing food and spitting it out to prevent weight gain	(Normal)	1	2	3	4	5	6	7	(Abnormal)
26. Wanting to be extremely thin	(Normal)	1	2	3	4	5	6	7	(Abnormal)
27. Being dissatisfied with the size or shape of one's body	(Normal)	1	2	3	4	5	6	7	(Abnormal)
28. Over-eating when feeling depressed	(Normal)	1	2	3	4	5	6	7	(Abnormal)
29. Deliberately not eating to upset someone else	(Normal)	1	2	3	4	5	6	7	(Abnormal)
30. Weighing oneself daily	(Normal)	1	2	3	4	5	6	7	(Abnormal)
31. Weighing oneself weekly	(Normal)	1	2	3	4	5	6	7	(Abnormal)
32. Being upset about having even a small amount of fat on one's body	(Normal)	1	2	3	4	5	6	7	(Abnormal)

The end! Thank-you so much for your participation!

Appendix E

Educational Psychology Graduate Student

Awareness of Eating Disorders

Feedback Sheet

Please read the following and keep this page for your information.

Eating disorders are being reported at rates ranging from 0.5% to 18% in various populations of our communities. Most researchers in this field agree that the secretive nature of these disorders, particularly bulimia nervosa and eating disorders not otherwise specified, means that a large number of cases remain unreported and/or undiagnosed. This issue of diagnosis is an important one for professionals to be aware of because there are high rates of psychiatric comorbidity and, especially amongst the anorexia nervosa population, high rates of mortality. That is, without proper diagnosis, these people are at risk of dying.

The information you provided on the questionnaire will help us to increase our understanding of the knowledge level and experience with eating disorders among training psychologists. This will assist in planning resource allocation for eating disorder educators and in improving curriculum on eating disorders in psychology training programs.

Thank you very much for taking the time to complete this survey. Again, if you are interested in the results of this study, or have any further questions, please contact either of the researchers below. If personal distress occurs as a result of participation, referrals for assistance can also be obtained by contacting the researchers below. Please keep this sheet for your information.

Suzy Worthington-White
(Master's Student)
sueblanc@look.ca

Dr. Barbara Paulson
(Supervisor)
barb.paulson@ualberta.ca
(780) 492-5298